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THE JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY AND ALLIED DISCIPLINES

Official Organ of the Association for Child Psychology and Psychiatry

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A CHILDREN'S BEHAVIOUR QUESTIONNAIRE FOR COMPLETION BY TEACHERS: PRELIMINARY FINDINGS

MICHAEL RUTTER

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INTRODUCTION

AN OVERALL psychiatric assessment of the child requires the combination of several different approaches to the measurement of the child's behaviour (Rutter and Graham, 1966), but as a first step in the evaluation, questionnaires have an important place, especially for screening or survey purposes. Because school teachers have the opportunity of observing and comparing large numbers of children and because of the practical importance of the child's behaviour in school, questionnaires completed by teachers are particularly useful screening devices. Unfortunately, as with other measures of child behaviour there are few adequately developed instruments (Pritchard, 1963). The present paper reports the development of a simple behavioural questionnaire for completion by teachers.

Wickman (1928) was the first to make a systematic attempt to measure children's behaviour in the classroom, and revisions of his scales by Haggerty (1925) and Olson (1930) were shown by them to have good reliability and validity. Among the more recent scales of general applicability for which there are some published details on reliability and validity are those described by Eisenberg *et al.* (1962), Mulligan (Mulligan, 1963; Mulligan *et al.*, 1963), Ross *et al.* (1965), and Stott (1963). Although excellent in many ways all the scales have important disadvantages (e.g. lack of diagnostic distinction within the overall concept of maladjustment, lack of recent validation, too great a length for a teacher to complete the scale on a whole class of children, unsuitability for pre-adolescent children etc.).

It appeared that there was a need for a reliable and valid short questionnaire suitable to be used with children in the middle age range, which teachers could complete fairly quickly (so that they might reasonably be expected to fill in the scale for a whole class of children for survey or other purposes), which concerned behaviour occurring in a school situation, and which could be used to discriminate between different types of behavioural or emotional disorder, as well as discriminating between children who show disorder and those who do not. The present paper reports preliminary findings on a scale which attempts to fill this need.

DEVELOPMENT OF THE SCALE

During the development of the scale, teachers in several classes in eight different schools completed the scale for 7-13-year-old children in classes of mixed sex. Where possible two or more teachers completed the scale on the same children. Afterwards, the teachers were interviewed; usually the teachers in each school were seen together

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for a group discussion. They were asked to describe the children they had rated, to outline the behaviour which had led to positive ratings, and to say what behaviours they considered relevant for each item on the scale. Samples of children who had been rated were also observed by the author.

By this means ambiguous or misunderstood items were revised or omitted. Most items requiring much inference on the part of the teacher were found unreliable and were dropped. Similarly, items referring to rare abnormalities (e.g. obsessional phenomena) were often interpreted in widely divergent ways, especially by teachers who had not encountered the behaviour in question, and these items also had to be omitted. Altogether, ten items used in earlier versions were omitted from the scale when it was finalized. Only one item (No. 6, 'not much liked by other children') was retained in a negative form. In earlier versions the term 'unpopular' had been used in this item but this was taken by some teachers to include only *active* dislike of the child by other children, and it was found necessary to use the phrase "not much liked by other children" if socially isolated or rejected children were to be identified, as well as those actually hated or tormented by others.

Two-point scales (yes or no) were found to be unnecessarily crude, and also to lead to large differences between teachers in the way they rated slightly deviant behaviour. On the other hand, some teachers (especially those in secondary schools who often had less intimate contact with the children) felt unable to make the discriminations required for four- or five-point scales. Thus, three-point scales were selected as those which all teachers felt able to use.

With all behavioural questionnaires there has been the problem of what criterion of disorder to use to assess the validity of the instrument being developed. As a first step it was decided to use children attending a psychiatric clinic as a criterion group of 'abnormal' children. While it was realized that this group was likely to be a special population of children with emotional or behavioural disorders, clinic groups had been used in the development of other scales and it was felt that if the scale were to have any usefulness it should at least be able to differentiate children attending psychiatric clinics. By comparing the total scores on the questionnaire (see below for details of scoring method) of samples of clinic and non-clinic children it was found that a score of 9 or more produced the best differentiation between the groups. As a further test of validity, another study was undertaken in which psychiatric interview ratings of those scoring above and below the cut-off point (a score of 9) were compared. More detailed information from teachers and from parents would also be necessary to assess validity adequately. Some preliminary findings on the relationship between different measures of behaviour have already been reported as part of a survey of 10- and 11-year-old children (Rutter and Graham, 1966).

In using the scale to select diagnostic sub-groups there were two main alternatives. Either the subgroups could be derived from data obtained with the scale (e.g. by factor analysis) or the scale could be scored to discriminate between already established clinical diagnostic sub-groups. The latter course was taken, as there are known and important differences in family background, response to treatment, and prognosis between the two largest clinical diagnostic categories: neurotic disorders and anti-social disorders (Rutter, 1965). Finer diagnostic distinctions with the scale were not found possible at this stage in its development (a different type of scale had to be

developed to select children with certain rarer disorders such as child psychosis and the hyperkinetic syndrome). Neurotic and antisocial sub-scores were then derived by comparing the items scored positively for neurotic clinic children and for antisocial clinic children (the clinic diagnoses being based on clinic case records).

The results reported later in this paper refer to the study of samples obtained after the method of scoring the questionnaire in its final form had already been worked out from these earlier pilot investigations.

DESCRIPTION OF SCALE

The scale consists of twenty-six brief statements concerning the child's behaviour (see appendix) to which the teacher has to check whether the statement "certainly applies", "applies somewhat" or "doesn't apply" to the child in question. These are given a weight of "2", "1", and "0" respectively to produce a total score with a range of 0-52 by summation of the scores of the twenty-six items. A "neurotic" sub-score is obtained by summing the scores of items 7, 10, 17 and 23 ("often worried, worries about many things"; "often appears miserable, unhappy, tearful or distressed"; "tends to be fearful or afraid of new things or new situations"; "has had tears on arrival at school or has refused to come into the building this year"). An "anti-social" subscore is obtained by summing the scores of items 4, 5, 15, 19, 20 and 26 ("often destroys own or others' belongings"; "frequently fights with other children"; "is often disobedient"; "often tells lies"; "has stolen things on one or more occasions"; "bullies other children").

The selection of children with neurotic or antisocial disorders by means of the scale is a two-stage procedure: (1) children with a total score of 9 or more are designated as showing some disorder; (2) of these children, those with a neurotic score exceeding the antisocial score are designated "neurotic", and those with an antisocial score exceeding the neurotic score are designated "antisocial". The children with equal neurotic and antisocial subscores remain undifferentiated.

METHOD AND RESULTS

(1) *Re-test reliability* was tested by getting four teachers to rate eighty 7-year-old children (forty boys and forty girls) in one school twice, with a 2-month interval between ratings. The ratings were made in different school terms and on the first occasion the teachers were not told that they would have to rate the children again the next term. The product-moment correlation between the total scores on the two occasions was + 0.89.

(2) *Inter-rater reliability* was tested by getting four teachers to rate seventy children (thirty-five boys and thirty-five girls) in the last term of infant school and four other teachers to rate the same children 2-3 months later in the children's first term in junior school. The product-moment correlation between the total scores on the two occasions (with ratings made by different teachers) was + 0.72.

(3) *The discriminative power* of the scale was tested by comparing the scores of children in the general population with the scores of children attending psychiatric clinics for emotional or behavioural disorders. The general population sample consisted of a random sample of fifty-five boys and thirty-one girls aged 9-13 years

resident in the city of Aberdeen.* Two clinics samples were studied. The first consisted of the twenty-two boys and twelve girls in the same age range who, at the time the questionnaires were completed, were currently attending the psychiatric clinic at the Hospital for Sick Children, Aberdeen,† for emotional or behavioural disorders (children attending for uncomplicated mental retardation or educational disorders only were excluded). The questionnaires were obtained as part of a total population survey and in many cases the teachers will have been unaware that the child was attending a psychiatric clinic. The second sample consisted of a similarly selected group of children attending The Maudsley Hospital. The questionnaires were sent out individually and the teachers knew that the child was attending the hospital.

In line with the results of the pilot investigations, it was found that the best discrimination between clinic and non-clinic children was obtained with a total score of 9 or more. About 11 per cent of boys and 3½ per cent of girls in the general population obtained scores of 9 or greater compared with about 80 per cent of the boys and 60 per cent of the girls in the clinic samples (see Table 1).

Very similar results were obtained in further samples obtained for cross-validation (Table 1). It was concluded that the scale was reasonably efficient in differentiating children attending psychiatric clinics. Both antisocial and neurotic children were differentiated but a slightly higher proportion of antisocial children than neurotic children were picked out by means of the scale.

(4) *Discrimination between neurotic children and antisocial children.* It could be argued that the discrimination between clinic and non-clinic children may have been partly due to the teachers' knowledge of the child's clinic attendance. This is unlikely to have been a major factor in that the discrimination of clinic children in Aberdeen (where many or most of the teachers were unaware of the child's clinic attendance) was nearly as good as for Maudsley Hospital children. Nevertheless, a harsher test of validity is the scale's power of discrimination between neurotic children and antisocial children.

The case notes of all new referrals to the Maudsley Hospital Children's Department were examined and a diagnosis of neurotic disorder, antisocial disorder, or other condition was made. Teachers were asked to complete scales on all children diagnosed as having a neurotic disorder or antisocial disorder. The diagnoses based on the scale sub-scores were then compared with the clinical diagnoses made previously from the case notes for all children scoring 9 or more on the scale. In about 90 per cent of antisocial children and 80 per cent of neurotic children the questionnaire diagnoses and the clinical diagnoses were in agreement (Table 2).

The findings were cross-validated using further samples of thirty-nine antisocial children and sixteen neurotic children with total questionnaire scores of 9 or more. The results were closely similar (Table 2).

The items used to produce the neurotic and antisocial sub-scores were based on the proportion of neurotic, antisocial and control children scoring 1 or 2 on each

*The sample was obtained as part of larger epidemiological investigation in Aberdeen undertaken in collaboration with Prof. R. Illsley of the Department of Sociology, University of Aberdeen, and Prof. H. G. Birch and Dr. S. Richardson of the Association for the Aid of Crippled Children, New York.

†I am grateful to Dr. I. Lowit for permission to study these children.

TABLE 1. CHILDREN WITH A TOTAL SCORE OF 9 OR MORE

		% scoring 9 or more.	Total number
1st Sample			
<i>Boys</i>	General population—Aberdeen	10.9	55
	Aberdeen psychiatric clinic	77.3	22
	Maudsley Hospital	87.7	46
<i>Girls</i>	General population—Aberdeen	3.2	31
	Aberdeen psychiatric clinic	50.0	12
	Maudsley Hospital	72.1	29
2nd Sample			
<i>Boys</i>	General population—Aberdeen	9.0	100
	Maudsley Hospital	68.8	45
<i>Girls</i>	General population—Aberdeen	5.0	100
	Maudsley Hospital	69.1	39
TOTAL (1st and 2nd samples)			
(a) <i>By Sex</i>			
<i>Boys</i>	General population	9.7	155
	Clinic	77.9	113
<i>Girls</i>	General population	4.6	131
	Clinic	67.5	80
(b) <i>By diagnosis and sex</i>			
	Antisocial boys (clinic)	85.7	63
	Neurotic boys (clinic)	80.0	30
	Antisocial girls (clinic)	70.0	40
	Neurotic girls (clinic)	64.5	31

TABLE 2. DISCRIMINATION BETWEEN NEUROTIC CHILDREN AND ANTISOCIAL CHILDREN*
(WITHIN CLINIC SAMPLE)

Agreement between clinic diagnosis and scale diagnosis				Clinic diagnosis
No. agreement	Total No.	%		
1st sample				
26	30	86.6	Antisocial boys	
11	15	73.3	Neurotic boys	
11	12	91.7	Antisocial girls	
9	10	90.0	Neurotic girls	
2nd sample				
17	21	80.9	Antisocial boys	
6	8	75.0	Neurotic boys	
13	18	72.2	Antisocial girls	
7	8	88.0	Neurotic girls	

*N.B. Only children with total score of 9 or more included.

item during a pilot study undertaken during the development of the scale. The results for the study proper are given in Table 3 which shows the proportion of children in each of the groups scoring 1 or 2 on each item, with the pooled first and cross-validation samples. Table 4 shows which items discriminate between the groups at a significance level of 5 per cent or better. The items used to produce the subscores all reliably discriminate between neurotic and antisocial children of both sexes, except item 23 where the discrimination falls just short of the 5 per cent level for boys. No other items significantly discriminate between the groups for both boys and girls.

(5) *Relationship between questionnaire scores and ratings based on a standardized psychiatric interview with the child.* Children aged 9, 10 and 11 years were interviewed for approximately $\frac{1}{2}$ hr by child psychiatrists, as part of a survey on the Isle of Wight, using a standardized technique of known and satisfactory reliability (Rutter and Graham, 1966). On the basis of the interview a rating of definite psychiatric disorder, uncertain, or no psychiatric disorder was made. Teachers had previously completed behavioural scales on all children in the age group, so that it was possible to compare

TABLE 3. CHILDREN IN ANTISOCIAL, NEUROTIC, AND CONTROL GROUPS SCORING 1 OR 2 ON INDIVIDUAL ITEMS

Item No.	Antisocial boys		Antisocial girls		Neurotic boys		Neurotic girls		Control boys		Control girls	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	42	66.67	20	50.00	16	53.33	7	22.58	24	15.48	21	16.03
2	22	34.92	16	40.00	5	16.67	7	22.58	5	3.23	1	0.76
3	34	53.97	16	40.00	20	66.67	10	32.26	33	21.29	24	18.32
4	21	33.33	8	20.00	3	10.00	1	3.23	6	3.87	1	0.76
5	39	61.90	20	50.00	9	30.00	1	3.23	20	12.90	9	6.87
6	35	55.56	23	57.50	21	70.00	15	48.39	17	10.97	24	18.32
7	26	41.27	18	45.00	24	80.00	26	83.87	24	15.48	17	12.98
8	32	50.79	18	45.00	22	73.33	17	54.84	22	14.19	13	9.92
9	32	50.79	24	60.00	19	63.33	7	22.58	15	9.68	7	5.34
10	19	30.16	15	37.50	20	66.67	21	67.74	21	13.55	6	4.58
11	9	14.29	8	20.00	9	30.00	7	22.58	11	7.09	3	2.29
12	4	6.35	2	5.00	6	20.00	1	3.23	4	2.58	10	7.63
13	11	17.46	14	35.00	5	16.67	7	22.58	39	25.16	32	24.43
14	14	22.22	9	22.50	9	30.00	16	51.61	8	5.16	0	—
15	45	71.43	24	60.00	7	23.33	8	25.81	20	12.90	9	6.87
16	54	85.71	27	67.50	22	73.33	16	51.61	58	37.42	33	25.19
17	16	25.39	16	40.00	19	63.33	20	64.52	24	15.48	23	17.56
18	3	4.76	17	42.50	12	40.00	15	48.39	9	5.81	6	4.58
19	44	69.84	24	60.00	10	33.33	4	12.90	12	7.74	2	1.53
20	26	41.27	16	40.00	1	3.33	0	—	4	2.58	1	0.76
21	6	9.52	2	5.00	3	10.00	1	3.23	0	—	2	1.53
22	8	12.69	16	40.00	6	20.00	18	58.06	3	1.94	4	3.05
23	8	12.69	6	15.00	8	26.67	12	38.71	3	1.94	0	—
24	8	12.69	3	7.50	5	16.67	1	3.23	7	4.52	0	—
25	14	22.22	2	5.00	1	3.33	3	9.68	11	7.09	0	—
26	33	52.38	18	45.00	6	20.00	0	—	8	5.16	3	2.29
TOTAL	63		40		30		31		155		131	

TABLE 4. DISCRIMINATIVE POWER OF INDIVIDUAL ITEMS OF SCALE FOR BOYS

Item	Total 'disturbed' vs. control	Neurotic vs. control	Antisocial vs. control	Neurotic vs. antisocial
1	D	N	A	
2	D	N	A	
3	D	N	A	
4	D		A	A
5	D	N	A	A
6	D	N	A	
7	D	N	A	N
8	D	N	A	N
9	D	N	A	
10	D	N	A	N
11	D	N		
12	D	N		
13				
14	D	N	A	
15	D		A	A
16	D	N	A	
17	D	N		N
18	D	N		N
19	D	N	A	A
20	D		A	A
21	D	N	A	
22	D	N	A	
23	D	N	A	
24	D	N	A	
25	D		A	A
26	D		A	A

In each cell a letter indicates that there is a significant difference between the groups (using the critical ratio for a difference between proportions). The letter used indicates the group with the higher proportion of children scoring 1 or 2 on that item (N = neurotic, A = antisocial, C = control, D = Total 'disturbed').

the psychiatric ratings for those children with a score below 9 and those with a score of 9 or more on the scale. The psychiatrist who saw the child was told only the child's name and age and was unaware of the scale score or any other information about the child.

In a 5 per cent random sample of 147 children* there were 133 who scored 8 or less on the scale. Only three (2.3 per cent) received a rating of definite disorder on the psychiatric interview with the child, while thirty-two (24.1 per cent) were rated as showing possible disorder; 73.7 per cent were rated normal. Of the total population of 10- and 11-year-old children resident on the Isle of Wight, there were 7.2 per cent

*The random sample obtained actually consisted of 159 children, but owing to refusals and emigration from the Isle of Wight during the interval between selection and testing, only 147 children were seen.

TABLE 5. DISCRIMINATIVE POWER OF INDIVIDUAL ITEMS OF SCALE FOR GIRLS

Item	Total 'disturbed' vs. control	Neurotic vs. control	Antisocial vs. control	Neurotic vs. antisocial
1	D		A	A
2	D	N	A	
3	D		A	
4	D		A	
5	D		A	A
6	D	N	A	A
7	D	N	A	
8	D	N	A	N
9	D	N	A	
10	D	N	A	N
11	D	N	A	N
12			A	
13				
14	D	N	A	N
15	D	N	A	A
16	D	N	A	
17	D	N	A	
18	D	N	A	N
19	D	N	A	
20	D		A	A
21			A	A
22	D	N	A	
23	D	N	A	
24	D		A	N
25	D	N	A	
26	D		A	A

Notations as in Table 4.

(157) children with scores of 9 or more. Of these, 20 per cent were rated as definitely abnormal (over eight times as many as among those scoring less than 9 on the questionnaire), 48 per cent as possibly abnormal and only 32 per cent as normal. Thus, as judged from a psychiatric examination of the child, children scoring 9 or more on the questionnaire included a considerably higher proportion of psychiatrically abnormal children than that found in children scoring less than 9 on the scale.

However, the validity of the psychiatric interview has still to be established, and it appears that an interview with the child is less efficient in the differentiation of antisocial behaviour than it is in the differentiation of neurotic disorders (Rutter and Graham, in preparation). A better evaluation of the psychiatric state of children scoring 9 or more on the scale is provided by an assessment based on an intensive interview with the child's parent, and detailed information from the school.*

*All the children had moved class and half had moved school since the teachers' questionnaire had been obtained. Thus, in all cases the more detailed information was provided by a different teacher from the one who completed the scale.

as well as a psychiatric examination. On this total assessment 43 per cent of children scoring 9 or more on the scale are rated as having a definite psychiatric disorder compared with 6.3 per cent in the population as a whole (Rutter and Graham, 1966).

DISCUSSION

It has been shown that the scale has satisfactory re-test and inter-rater reliability, and that it is reasonably efficient in differentiating children with neurotic or anti-social disorders. Similar findings were reported by Richman (1964), using a slightly modified version of the scale with a group of epileptic children at a special school. She found that the re-test reliability over a 13-week period was $+0.85$ ($N = 91$) and the correlation between the ratings of a class teacher and a special subject teacher was $+0.70$ ($N = 73$). She also found a high level of agreement between questionnaire scores and the ratings on a 'blind' psychiatric interview with the child (agreement in 76.7 per cent of cases, $N = 60$, $\chi^2 = 17.51$, $P < 0.001$). Thus, Richman's findings confirm those reported here that the scale is reliable and is efficient in differentiating children with psychiatric disorder.

The scale requires only a short time to complete and is easy to score. The findings suggest that the questionnaire may usefully be employed as a screening instrument to select children likely to show some emotional or behavioural disorder. As the scale differentiates neurotic and antisocial disorders it may also be used as a standardized means of describing a child's disorder, and it has been found to form a useful part of the school report routinely obtained for children referred to the Maudsley Hospital. Similarly it has been used as one measure of behaviour in several therapeutic trials currently being conducted, but its value in the assessment of changes in behaviour has yet to be demonstrated.

Although the questionnaire has been shown to be a very useful measure of the child's behaviour in the school situation, certain limitations need to be emphasized. Firstly, it is a simple and crude measure and for clinical purposes it needs to be supplemented by other information from the teacher. Secondly, as scored in the way described, it cannot be used to pick out children with monosymptomatic disorders. Thirdly, it is less efficient in differentiating children with certain less common disorders of a circumscribed kind such as anorexia nervosa, conversion hysteria and some obsessional disorders. Necessarily, it will not select children with symptoms only manifest outside the school situation (e.g. nocturnal enuresis and sleep disorders). An earlier study (Rutter and Graham, 1966) has suggested that the overlap between disorders perceived by teachers and those perceived by parents is surprisingly small, but the reasons for this await further investigation. Lastly, the value of any scale for completion by teachers depends on the skill of the teacher as an observer, and on the opportunities for the teacher to observe the child in varied situations. The scales probably convey a more valid picture of the child's behaviour when the teacher has seen the child at play and at mealtimes as well as in the classroom situation. Such opportunities are often more freely available in primary than secondary schools.

SUMMARY

A short children's behavioural scale for completion by teachers was described.

Good re-test and inter-rater reliability were demonstrated. The scale was shown to be an efficient screening device in the selection of children with behavioural and emotional disorders. Furthermore, it was shown to be a valid discriminator between neurotic and antisocial conditions. Some possible uses of the scale were briefly outlined and its limitations were described.

Acknowledgements—I am indebted to Dr. A. E. Maxwell for advice on statistical matters. I am also grateful to the many teachers without whose help the scale could not have developed. The study was supported in part by a grant from the Association for the Aid of Crippled Children, New York.

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APPENDIX
CHILD SCALE B

TO BE COMPLETED BY TEACHERS

Below are a series of descriptions of behaviour often shown by children. After each statement are three columns: "Doesn't Apply", "Applies Somewhat", and "Certainly Applies". If the child definitely shows the behaviour described by the statement place a cross in the box under "Certainly Applies". If the child shows the behaviour described by the statement but to a lesser degree or less often place a cross in the box under "Applies Somewhat". If, **as far as you are aware**, the child does not show the behaviour place a cross in the box under "Doesn't Apply".

1. Please put ONE cross against EACH statement. Thank you.

Statement	Doesn't Apply	Applies Somewhat	Certainly Applies	FOR OFFICE USE ONLY
1. Very restless. Often running about or jumping up and down. Hardly ever still	☐	☐	☐	☐
2. Truants from school	☐	☐	☐	☐
3. Squirmy, fidgety child	☐	☐	☐	☐
4. Often destroys own or others' belongings	☐	☐	☐	☐
5. Frequently fights with other children ..	☐	☐	☐	☐
6. Not much liked by other children ..	☐	☐	☐	☐
7. Often worried, worries about many things	☐	☐	☐	☐
8. Tends to do things on his own—rather solitary	☐	☐	☐	☐
9. Irritable. Is quick to "fly off the handle"	☐	☐	☐	☐
10. Often appears miserable, unhappy, tearful or distressed	☐	☐	☐	☐
11. Has twitches, mannerisms or tics of the face or body	☐	☐	☐	☐
12. Frequently sucks thumb or finger ..	☐	☐	☐	☐
13. Frequently bites nails or fingers ..	☐	☐	☐	☐
14. Tends to be absent from school for trivial reasons	☐	☐	☐	☐
15. Is often disobedient	☐	☐	☐	☐
16. Has poor concentration or short attention span	☐	☐	☐	☐
17. Tends to be fearful or afraid of new things or new situations	☐	☐	☐	☐
18. Fussy or over-particular child ..	☐	☐	☐	☐
19. Often tells lies	☐	☐	☐	☐
20. Has stolen things on one or more occasions	☐	☐	☐	☐
21. Has wet or soiled self at school this year ..	☐	☐	☐	☐
22. Often complains of pains or aches ..	☐	☐	☐	☐
23. Has had tears on arrival at school or has refused to come into the building this year	☐	☐	☐	☐
24. Has a stutter or stammer	☐	☐	☐	☐
25. Has other speech difficulty	☐	☐	☐	☐
26. Bullies other children	☐	☐	☐	☐

Are there any other problems of behaviour?

.....

.....

Signature: Mr/Mrs/Miss

How well do you know this child? Very well ☐

Moderately well ☐ Not very well ☐

THANK YOU VERY MUCH FOR YOUR HELP

THE ROLE OF EYE-TO-EYE CONTACT IN MATERNAL-INFANT ATTACHMENT

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AMONG clinicians and researchers in child development there is general agreement that the character and quality of one's earliest relationships will contribute significantly to, and even predict the nature of, many later behaviours. Consequently, increasing attention is being focussed on the parameters of maternal-infant interaction in a search to define the more significant variables of this system. An eloquent attempt in this direction was made by Bowlby (1958) in a paper devoted to "The nature of the child's tie to his mother". After reviewing the relevant aspects of both psychoanalytic and learning theories, Bowlby takes an ethological position in describing the growth of the infant's first relationship. He cites five behaviours—crying, smiling, following, clinging, and sucking—as innate "releasers" of maternal caretaking responses.

The point of departure of the present report is to add another variable to Bowlby's list: eye-to-eye contact, an interchange that mediates a substantial part of the non-verbal transactions between human beings. This interaction (as will be noted later) is well known in the animal kingdom, and it is beginning to be studied by observers of adult behaviour (Exline, 1963; Exline and Winters, 1965; Argyle and Dean, 1965) but has received little consideration by child development researchers. In this report the vicissitudes of eye-to-eye contact will be followed through the first six months of life with an emphasis on attachment from the point of view of both mother and infant. The author's aim is to bring together a number of diverse but related observations in order to offer some ideas that can be subjected to experimental verification.

Some introductory comments on the visual mode

There are some unique peculiarities of the visual mode that favour its pre-eminence as a major vehicle of intra-psychic and inter-personal development. Greenman (1963) states that of all the neonatal reflexes visual fixation and following are the only ones that do not drop out over time, but, on the contrary, demonstrate increasing facility. Rheingold (1961) notes that this behaviour "... is all the more remarkable ... because of its maturity relative to ... other patterns of behaviour ... (so that by the end of the second month) ... it is already in the form it will keep throughout life". Furthermore, following and fixation are among the first acts of the infant that are both intentional and subject to his control. Vision is the only modality which, by closure of the eyelids, gaze aversion, and pupillary constriction

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and dilatation is constructed as an "on-off" system that can easily modulate or eliminate external sensory input, sometimes at will, within the first months of life. And, finally, the appeal of the mother's eyes to the child (and of his eyes to her) is facilitated by their stimulus richness. In comparison with other areas of the body surface the eye has a remarkable array of interesting qualities such as the shininess of the globe, the fact that it is mobile while at the same time fixed in space, the contrasts between the pupil-iris-cornea configuration, the capacity of the pupil to vary in diameter, and the differing effects of variations in the width of the palpebral fissure.

Rheingold (1961) has suggested that "... not physical, but visual contact is at the basis of human sociability ...", and she adds "... (that the) basic and primary activity is the infant's visual exploration of his environment ...". In his observations of neonatal visual behaviour Greenman (1963) makes the point that the importance of vision "... exceeds the essential role it plays in perception of the outside world and in differentiating the self from the non-self ... (in that) ... one of the primary ways in which human beings communicate at a non-verbal level is by looking at one another ... (and) ... when visual communication does not exist between humans, something deviant or pathological often exists in the relationship".

The first comprehensive review of the functions of the distance receptors, vision and hearing, in the development of social responsiveness has been made by Walters and Parke (1965). As for vision, it is only recently that studies exclusively concerned with the role of this modality as an important avenue for accomplishing the tasks of early development have appeared in the literature. These have tended to fall into three categories, the first of which has been concerned with the evolution of perceptual and attentive capacities in the infant (Fantz, 1958; Greenman, 1963; Kagan, 1965; Kagan and Lewis, 1965; Lewis, Kagan and Kalafat, 1966; Kagan, Henker, Hen-Tov, Levine and Lewis, 1966; Stechler and Latz, 1966; White and Castle, 1964; White, Castle, and Held, 1964; Wolff and White, 1965; Wolff, 1965). Another group of papers has described, primarily from the psychoanalytic point of view, the effects of blindness on maturational processes (Burlingham, 1964; Fraiberg and Freedman, 1964; Nagera and Colonna, 1965; Sandler, 1953; Wills, 1965). Although these efforts have been useful, a reconstruction of the functions of vision built upon the effects of its absence is fraught with difficulties, not the least of which is maternal disturbance secondary to the birth of a severely defective child. A third series of reports approaches behaviour, broadly speaking, from the ethological position (Ambrose, 1961; Freedman, 1961 and 1964; Harlow, 1961; Szekely, 1954; Wolff, 1963). Of the latter type, three studies have particular relevance to eye-to-eye contact. Kaila (1935), Spitz and Wolff (1946) and Ahrens (1954)—all of whom were exploring the infant's social responses to faces—have established an important fact: that one of the earliest and most effective stimuli for eliciting social smiling is a visual gestalt ("key stimulus" in ethological terms) consisting of the two eyes and forehead configuration *en face*, i.e. such that the eyes of the infant and those of the observer meet fully in the same vertical plane of rotation. Indirect confirmation for this finding is implicit in Watson's (1965) work. Studying both smiling to, and fixation of, faces and face schemata, in infants from 7 to 26 weeks of age he found that both behaviours were maximal in the *en face* position. Watson also noted that this

facial orientation was not the most frequent in routine caretaking but that when mothers addressed their infants "socially", i.e. to the face, they used the *en face* orientation. But none of these authors, including Spitz (1965) in his recent text on the formation of early object relations, elaborate on the long-range significance of this eye-to-eye interaction in more than a passing way.

THE FIRST THREE MONTHS

The beginnings of maternal attachment

The development of maternal attachments in most non-human mammals requires a comparatively short time span, and the ties that result are rather abruptly terminated by active discouragement of the infant's approach behaviour. Rosenblatt (1966) has recently summarized the course of these processes in a number of animal species. Even in those species where infancy is prolonged, these non-human mothers seem to need far less responsiveness from their offspring than would satisfy man. Eye-to-eye contact and precursors of the human smiling response (i.e. lip retraction in dogs and cats and the "grins" and "grimaces" of primates) play a minimal part in sub-human attachments. When these behaviours serve a social function it is mainly to indicate fear, "appeasement", or the intention to attack (Andrew, 1965; Lorenz, 1953). "Staring down" in man occurs in a similar context. Generally, however, the more usual pattern of intermittent gaze fixation between humans "... signifies a readiness to interact ... (and) ... little social interaction is possible without it" (Hutt and Ounsted, 1966).

The human mother is subject to an extended, exceedingly trying and often unrewarding period of caring for her infant. Her neonate has a remarkably limited repertoire with which to sustain her. Indeed, his total helplessness, crying, elimination behaviour, and physical appearance, frequently elicit aversive reactions. Thus, in dealing with the human species, nature has been wise in making both eye-to-eye contact, and the social smile that it often releases in these early months, behaviours that at this stage of development generally foster positive maternal feelings and a sense of payment for "services rendered". As others have suggested (Ahrens, 1954; Freedman, 1964; and Szekely, 1954), there is no reason to believe that smiling and eye contact in human babies differ in origin from the primarily defensive functions they play in the animal world. Lorenz (1966) views the human smile as a ritualized form of aggression comparable to the "greeting" ceremonies which inhibit intra-specific fighting in many lower animals. Hence, though a mother's response to these achievements may be an *illusion*, from an evolutionary point of view it is an illusion with survival value.

Both Greenman (1963) and Wolff (1963) note the pleasure that new mothers take when their infants begin to "see" them. The latter author notes that during the fourth week of life "... the baby now seems to focus on the observer's eyes as if there were true eye-to-eye contact ... (and) ... it appears to be specifically the contact between the eyes (of the infant and the observer) that is effective (in evoking a smile)". Three of his mothers, who spent little time playing with their infants before the fourth week, suddenly began doing so within 2 or 3 days of his first recording eye-to-eye contact, yet these mothers had no idea of why this was so. Unlike the smiling response, which follows soon after eye contact is established,

the infant's fixing of his mother's gaze seems rarely available to her for conscious recall.

One aspect of a longitudinal study in which the author is participating involves rather extensive post-natal interviews with fifty-four primiparous mothers.* Most of these women describe some initial feelings of "strangeness", "distance" and unfamiliarity towards their offspring which persist for at least the first few weeks of life. When one inquires as to when the mother first felt love, when she ceased feeling "strange" with her child and when he "became a person" to her, the answer to these questions frequently involves the baby's "looking", as if recognizing objects in the environment. A small number specifically articulate that eye-to-eye contact releases strong positive feelings. These feelings have something to do with "being recognized" in a highly personal and intimate way.

The resolution of maternal anxiety

When one "sees eye-to-eye" with another person, exclusive communication, "resonance", and accord of a fundamental sort are implied. The often intense discomfort experienced in encounters with the blind or cross-eyed may indeed stem in part from a variety of unconscious fantasies. But the absence of eye-to-eye contact in these situations realistically leaves one feeling ill at ease, since it impedes the most usual form of mutual recognition, assessment and contact. Visual impairment interferes with the development of certain social responses that are derivatives of eye-to-eye contact. Freedman (1964) comments that although fleeting spontaneous smiles emerge at the usual time in blind infants "... prolonged social smiling seems to require visual regard as a maintaining stimulus". Selma Fraiberg (personal communication), in her observations of blind infants, has noted that she was unable to carry out a normal "dialogue" with her subjects, with one exception, a baby who was supposedly blind but demonstrated visual following. She also comments (Fraiberg and Freedman, 1964) that "When the mother sought contact through her eyes, the child's eyes did not meet hers, which feels curiously like a rebuff if you do not know the baby is blind. All those ways in which the eyes unite human partners (are) denied this mother and baby." In an attenuated form, the same situation—probably one of the sources of early maternal anxiety—obtains for a new mother before her infant establishes eye contact with her. In the course of several home observations, previously anxious and uncomfortable mothers have told the author that they feel somehow "more at ease" and "comfortable" with their infants. This shift coincides with the beginning of true eye-to-eye contact over a time span as brief as three days, but as in Wolff's (1963) study these mothers were unable to specify why they felt differently.

The eye gestalt as a perceptual organizer

Though up to 3 months eye contact has no true social relevance to the infant, it may fulfil another function. A baby of this age reacts to a wide variety of endogenous and exogenous stimuli. Yet in terms of orienting, attentive and discriminative capacities, his visual apparatus is manifestly advanced relative to other receptor systems. Eye-to-eye contact occurs either simultaneously with, or in close contiguity

*The senior investigator in this research is Dr. Howard A. Moss, Chief of Maternal-Infant Interaction Section, Child Research Branch, National Institute of Mental Health.

to, many non-visual stimuli. Furthermore, the eye gestalt is a highly discriminable stimulus configuration that can focus and hold the infant's attention more successfully than many competing internal and external perceptual events. One could then speculate that in the first months of life many forms of stimulation are experienced by the infant as "coming from" the eyes of his caretakers. If this speculation were even partially true, and relevant empirical data will be presented below, the vicissitudes of eye-to-eye contact would provide one starting point for examining the origins and persistence of perceptions in adults whereby internal experiences are attributed to external events.

Many mothers report that as soon as eye-to-eye contact is established it often dominates the feeding situation, so that their infants are totally distracted from sucking. Only much later does the sight of breast or bottle evoke excitement. It is perfectly possible that the oral and body contact sensations of feeding may, through contiguity, be attributed to the eyes of the caretaker. Spitz (1965) was the first to suggest that the Isakower phenomenon (1938) and Lewin's (1950) "blank dream screen" represent a fusion of the breast and the visually perceived face. Also, when an infant of this age is spoken to he ignores the mouth of the speaker and fixates the eyes. According to Ahrens (1954) the mouth is not involved in eliciting the smiling response until the fifth or sixth month, and even then eye fixation precedes the smile.

Though relatively little is known about the development of body image, if attention to eyes is dominant in early development it should be reflected in the emerging body concept of the young child. Thus, despite the fact that psychoanalytic theory has emphasized the mouth as an early focal point of body image (Spitz, 1955) in terms of their salience the eyes should have priority. Shapiro and Stine (1965) collected the figure drawings of 3- and 4-year-old children in order to test the primacy of mouth perceptions. In their younger sample, less than 46 months old, 89 per cent drew eyes while 22 per cent drew the mouth. Ninety-nine per cent of children older than 46 months drew eyes and 75 per cent the mouth. They also found that eyes were represented independently of the nose and mouth, both of which tended to appear simultaneously and usually later in time. Some children, when asked to draw a face, will represent the eyes alone. As to whether figure drawings in fact represent body image, a definitive answer must await further research. Nonetheless, Shapiro and Stine suggest that the earliest body representations are taken from visual experience while tactile experiences are only later "projected". These drawings, of course, bear a strong resemblance to the "two eyes" gestalt mentioned earlier, a fact that further supports the argument that this stimulus configuration is selectively attended to as the "locus vitae" of the infant's primary caretakers, and as such serves as an important organizer of his perceptual world.

FOUR TO SIX MONTHS

Reciprocal attachment

By the fourth month an infant shows differential reactions of anticipatory excitement to his mother's approaching step, her voice, and for the present purposes most important, her face, by his selective smiling response. Up to this time his smiles have been indiscriminate. Ahrens (1954) states that the "... absolute stimulus ... which must stand at the root of social behaviour ... (is) ... the eye part (of a mask

or an observer's face)". Rheingold (1961) has pointed out that the infant's capacity to initiate physical contact and clinging develop towards the end of the first year of life. For sub-human primates such "contact comfort" (Harlow, 1961) is essential in establishing their first relationships and can be sought out from birth. Schaffer and Emerson (1964b) found that "non-cuddly" infants displayed less intense social relationships in the first year of life when compared with a "cuddly" group; but by 18-months both populations were comparable in their attachment behaviours. Elsewhere (Schaffer and Emerson, 1964a) they observe that with increasing frequency during the first year of life, situations in which "visually maintained contact" is interrupted are the most provocative of separation protest.

Eye-to-eye contact is one of the most intense and binding visual interactions for an infant at this age. And though visual scanning of other facial characteristics becomes an associated behaviour, the maternal eye gestalt retains its salience. Kagan *et al.* (1966) found that 4-month-old infants smiled far more often to the presentation of a realistic face stimulus than to those where the features were either scrambled or lacking eye representations. Children from 4½ to 10½ years-of-age, given the task of identifying familiar peers from photographs showing isolated facial features, were far more successful when part or all of the two eyes and forehead configuration was displayed (Goldstein and Mackenberg, 1966).

Through repeated visual scrutiny of his mother's face, more particularly its eye area, the infant of 4-6 months comes to single out his primary caretaker. In a sense, one might say that this face—the most discrete and localizable human point of reference in the infant's world—is "mother". Only gradually, over many months, does the rest of her body become an integral part of his scheme of things.

A fundamental two-way process of communication—*looking at* and *being looked at* (Almansi, 1960)—is set in motion. In the normal course of events this process continues to operate in human relationships. The fulfilment of physical needs, and the experiencing of pleasurable stimulation through non-visual modes, are equally significant factors in the development of attachment. Eye-to-eye contact is one component in the matrix of maternal and infant behaviours that comprise reciprocal interaction. Yet the nature of the eye contact between a mother and her baby seems to cut across all interactional systems and conveys the intimacy or "distance" characteristic of their relationship as a whole.

The intensity of the first attachment

The strength of the infant's tie to his mother's face is affected both by his characteristics and those of the caretaking environment. In the course of close to four hundred hours of naturalistic observations of some thirty mother-infant pairs, the author has noted marked variations in the patterns of eye contact among infants. Certain visually alert infants engage in vigorous attempts to search out their mothers' eyes and when contact is achieved they appear totally engaged. Others may make contact but somehow never display the "fascination" that can occur during such an exchange. Still another class of infants seem to avoid their mothers' eyes and thus pre-empt reciprocal maternal eye contact. The factors that contribute to these differences seem to be accessible to systematic analysis.

Concepts such as attentiveness, arousal level, and orienting behaviour in the

infant, are often based on visual functioning. The term "alertness" is frequently used to characterize the intensity of these behaviours. In the early months of life, when one describes an infant as alert or dull, that judgement is primarily based on his visual activities: how long his eyes remain open; how soon he seems to "see", i.e. follow and fixate; the duration of his fixations; and the intensity of his gaze.

Freedman (1965), in his twin studies, found that the age of onset and intensity of visual fixation of the mother's face was the same in monozygotic pairs. Wolff (1965) has established that the amount of time neonates spend in "alert inactivity", the state in which maximal visual attention occurs, varies enormously in individual infants but shows a steady increment over the first month of life. *Sex differences* in visual attentiveness are also evident. In a series of studies one group of investigators (Kagan, 1965; Kagan and Lewis, 1965; Lewis, Kagan and Kalafat, 1966, Kagan *et al.*, 1966) has demonstrated that females exhibit greater attentiveness and more rapid habituation time to human faces. Girls are therefore likely to develop a differentiated percept of their mother's face earlier than boys. In general, one might suppose that a visually alert baby would attract early, frequent, and possibly more rewarding eye-to-eye contact from his mother, and that he would thereby develop a precociously differentiated and stronger bond with her face. Conversely, the tie of the blind infant to his mother, both in terms of specificity and intensity, should be significantly weaker than that of the sighted infant. According to workers in this area this is often the case (personal communications from Daniel Freedman, Selma Fraiberg and Dorothy Burlingham). Nagera and Colonna (1965) comment that these children "... sometimes give the impression that they readily and easily exchange objects, even for unfamiliar ones, as if object constancy had not been properly established".

Another infant characteristic that is likely to influence attachment has to do with the differences that infants manifest in terms of *sensory modality preferences*. Benjamin (1959), for example, mentions that babies can be classified as visual, auditory, or tactile and kinesthetic, in the sense that they are predominantly soothed through and explore with one or another of these receptor systems. If such a categorization proves to be valid, then an infant who is a "visual responder" should be more likely to establish a stronger tie to his mother's face.

A fourth and final factor is the infant's *predisposition to gaze aversion*. The author has seen a number of babies during the first three months of life who persistently avoid maternal eye contact. One mother of such an infant, after vigorous but unsuccessful attempts to catch his eye, angrily exclaimed: "Look at me"—she obviously felt rebuffed. Stechler and Latz (1966) also observed gaze aversion to the human face in infants of less than 1 month of age. The determinants of infantile gaze aversion are far from clear but the most plausible explanation, in the author's opinion, rests with the ethological data on the potency of the "eye gestalt" as an evoker of gaze aversion or flight responses in animals. Szekely (1954) reviews the history of these avoidance reactions along the evolutionary ladder, and constructs an encompassing theory of infantile anxiety within this frame of reference. According to Lorenz (1953), in the overwhelming majority of animals "... empty gazing is the normal state of affairs ... (and) ... amongst themselves, animals only look at each other fixedly when they intend to take drastic measures or are afraid of

each other . . . (hence) . . . they conceive a prolonged fixed gaze as being something hostile and threatening . . .”.

Similarly, turning to caretaking behaviours that act as determinants of the infant's face-tie, the *maternal predisposition to gaze aversion* will obviously affect eye contact with the baby. After several episodes of her 3-week-old infant's attempting to capture her gaze, one mother commented, as if to explain and apologize for her looking away, “He looks daggers”. Though total gaze aversion is relatively rare, a pattern of eye contact that permits only transient fleeting glances is not at all uncommon. And it seems reasonable to assume that the *quantity* of eye contact a mother provides her infant, both in terms of the frequency of this interchange and the degree to which it is sustained, should bear on the development of the face-tie. One would conjecture that only below a rather small magnitude of maternal eye contact would the quantity parameter be operative.

Support for this speculation is found in Schaffer and Emerson's (1964a) study of attachment behaviour. These authors conclude that maternal “availability” related neither to choice of most important object nor to intensity of attachment. They also found that the primary “need fulfiller” was not selected as the primary object of attachment in 39 per cent of their sample. These authors emphasize that “. . . (the) independence of the attachment system from the vicissitudes of physical needs is indicated”. It would seem that, *per se*, the amount of time a mother spends in caring for her infant would not affect attachment intensity. Watson (1965) observed that most caretaking behaviours are administered with the mother's face at a 45° orientation relative to that of the infant, while social interaction occurs at a 0° orientation, i.e. *en face*. Hence, a mother who provides perfectly adequate bathing, changing, dressing, etc., but who initiates little or no simultaneous eye contact, may deprive her infant of the optimal conditions for developing the face-tie. The infant and maternal characteristics just discussed should influence the strength of that tie. But one must consider the qualitative aspects of the relationship.

The quality of the relationship—contingent maternal behaviour

In his formulation of early social and attachment behaviour, Gewirtz (1961) stresses that “. . . we must take account of the circumstances under which given stimuli are made available to (the baby) and in particular, whether these stimuli are functional, and with his behaviours enter into effective contingencies for learning”. He notes, in discussing the deprivation of institutionalized infants, that what is lacking in such an environment is not contact *per se*, but caretaking behaviour that is contingent upon the baby's signals. It would seem worthwhile to differentiate at least three dimensions of such contingency.

First, a mother's responses should follow the infant's signals within a period of *time* that is sufficiently short for him to causally associate his behaviours with her actions. Schaffer and Emerson (1964a) found that “maternal responsiveness”, the rapidity with which the mother responded to her infant's demands, yielded a positive and significant correlation with both choice of a favoured caretaker and attachment intensity. A second parameter is the degree to which maternal responses accurately *meet the baby's immediate needs*. For example, one can often see mothers who are preoccupied with food intake interpret every fuss or cry as a sign of hunger and

act accordingly. As a result, they may force feeding and prolong distress, or waken a drowsy, full but fretful infant from sleep. Although neither the time nor "need meeting" axes of contingent responses directly involve eye-to-eye contact, these two parameters apply to maternal behaviours which probably become associated through contiguity with the infant's "gestalt" of his mother's gaze.

The third aspect of contingent behaviour is less refined but no less important than the preceding two. It has to do with the affective accompaniment of maternal eye contact. Behaviourally speaking, this might be defined as the *degree of animation and modulation of facial expression*, particularly around the upper half of the face. During the first months of life mothers utilize the eye-to-eye interchange for a variety of purposes: it can be used as a means of establishing pleasant social contact with the infant in a contented state; on other occasions it is used to "figure out" what is going on with a fussy or distressed baby. Still another use of the eye-to-eye exchange is to activate a placid infant or calm a fussy one. In the latter case, it is interesting that a baby who is mildly upset can be quieted through eye contact and the concomitant caretaking behaviours, but an infant who is fussing or crying either averts his gaze or, if he makes contact, often becomes more upset.

In all of these examples an observer senses an emotional "climate" that is specifically apparent through the mother's facial expression. One sees a range of this behaviour: some mothers maintain a fixed and flat expression, others a fixed but unconvincing smile, and still others a highly animated facies that reflects joy, anger or anxiety. There is little data on the capacity of infants to perceive such differences, but both Benjamin (1963) and Meili (1957) note that from the fourth month onward, i.e. when the mother's face begins to be differentiated from others, infants are particularly sensitive to changes in the upper portion of her face. A sober maternal demeanour can produce a fearful reaction in the infant. Ahrens (1954) observed that around the fifth month responsiveness to eyes diminishes and the mouth becomes more effective in eliciting smiling and attention. But after the mouth, the baby's eyes invariably fixate the eyes of an observer or a stylized "dummy" face, and if the gaze of the former is averted or the eyes of the latter are missing, the smiling ceases.

One could easily rate the degree of animation of the maternal face. However, whether a mother modulates her expression to the particular circumstances of the infant so as to reassure rather than disrupt, or quiet rather than prolong distress, is also a critical dimension of the eye-to-eye exchange that should strongly influence the quality of the infant's face-tie. In optimal circumstances all three dimensions of contingent maternal behaviour should function in parallel, but they can and often do operate quite independently of one another.

In passing, contingent behaviour thus defined may be the basis for establishing trust and the subjective sense of "meaning" (both of which in a sense are derivatives of events being predictable). Their early contingency experience may also determine the extent to which older children and adults rely upon and utilize non-verbal forms of communication such as eye-to-eye contact. If this form of interchange is primarily non-contingent, one result may be inordinate attention to such cues—as in some psychotic states where the patient may invalidate verbal communications while depending exclusively on non-verbal behaviours in assessing, often incorrectly,

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the intentions of therapist or family member. Alternatively, the glance as a means of communication may be totally abandoned, as in people who exhibit persistent gaze aversion or in "infantile autism" (Kanner, 1949; Wolff and Chess, 1964).

For a particular infant one would like to dimensionalize the infant and maternal variables in predicting the intensity and quality of the face-tie. Yet, even then one is hard put to determine the direction of effects; that is, to what extent maternal behaviours are influenced by infant characteristics and vice-versa. Currently, the work of Kagan and his associates (Kagan, 1965; Kagan and Lewis, 1965; Lewis, Kagan and Kalafat, 1966; and Kagan *et al.*, 1966) offers a paradigm in which some of these dimensions can be assessed under laboratory conditions. Fixation time, frequency of smiling and vocalization, and cardiac deceleration to the presentation of face stimuli, have already proven to be differentiating measures. Even more productive would be a combination of such studies with antecedent observations of the mother-infant pair from birth onwards.

In any event, if the face-tie is not established, or if its quality fosters disruption and distress, the infant will experience varying degrees of interference in forming his earliest—and probably future—human relationships. Enduring deviations in eye-to-eye contact should be concomitants of these attachment disturbances. As the concluding section of this report some of these deviations will be considered.

SOME RESIDUES OF THE FIRST 6 MONTHS

Because they are so obviously derived from the eye-to-eye interchange, and because they may emphasize some of the points just made, a number of phenomena that most likely represent "unfinished business" from the early months of life will be briefly discussed. In the examples to follow it is important to keep in mind that no reconstructions of past events can accurately determine the "causes" of behaviours observed or described in the present. An adult who reports disturbance in his parents may well be citing his own congenital characteristics, his parents' reactions to them, or both.

An affectively loaded phenomenon is that of "love at first sight". Singular facial characteristics, such as the quality and colour of hair and the morphology of the eyes, probably operate to some degree in the choice of every human love object. For the most part, a unique face is not especially sought out, nor is it more than an initiator of the attraction. But there are a number of patients in the author's experience, all of whom have disturbed relationships, who are fascinated by and drawn to particular faces, wholly independent of any other qualities of the person. One schizoid patient was able to trace his attraction to such faces back to a "motherly" teacher and from there to that of his unpredictable, frankly paranoid mother. A male homosexual used the "look" of the eyes (he was unable to specify the qualities) in selecting his partners, with whom the sexual contact was unimportant compared to the sense of "communion" he felt in face-to-face interactions. These behaviours might be described as attempts to rectify a previously established but dysphoric face-tie.

Almansi (1960) describes eye-face hypnagogic phenomena in a series of patients preoccupied with feelings of "... oral deprivation and object loss". Of interest was the fact that most of these patients were also scotophilic, a perversion that Shapiro

and Stine (1965) allude to in interpreting their figure drawings: "Some voyeuristic perversions . . . could be related to events occurring in this developmental period. (i.e. infancy and early childhood)." In a sense, the scopophilic does a great deal of "looking at" but in circumstances where he is not "looked at". One of Almansí's patients, whose mother was replaced by a "cruel wet nurse" at a young age, experienced resolution of his symptoms during an analytic hour in which he "... visualized with great clarity the dark, benevolent eyes of his mother, isolated and suspended in space, looking down upon him".

The most extreme examples of deviant eye contact are seen in "anaclitic depression" (Spitz, 1946b) and "infantile autism" (Kanner, 1949), in both of which total gaze aversion is the rule. Discussing their experience with the latter condition, Wolff and Chess (1964) state that "a diagnosis or at least a suspicion of autism is usually arrived at very quickly, and as if intuitively . . . one senses whether or not one is making contact (which seems largely based on) the experience of eye-to-eye contact with the other person and on the quality of this contact". Their patients displayed abnormalities of eye-to-eye contact, ranging from a blank stare to total gaze aversion, proportional to the level of disturbance. Like Wills' (1965) blind children, the autistic or anacritically depressed infants may experience "... some critical period when they fail to cathect and organize their external world (and) subsequently withdraw from the attempt". This is not to imply that either of these clinical states is a simple manifestation of deviant eye contact, but rather that these visual avoidance behaviours are pathognomonic of as yet unidentified but probably gross disturbances in the mother-infant relationship.

SUMMARY

This paper considers the developmental significance of eye-to-eye contact, between mother and infant, in the first six months of life. In a variety of ways this interchange facilitates the attachment of mother and infant to one another. The biological roots of eye-to-eye behaviour are discussed and infant and maternal characteristics that should predict to the quality and intensity of the infant's tie to his mother's face are described. The paper concludes with some psychopathological sequelae of deviant eye-to-eye contact.

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A MARATHON BEHAVIOUR MODIFICATION OF A SELECTIVELY MUTE CHILD

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THIS PAPER describes the one-day treatment of a selectively mute child.

Case history

Sally, aged six, would speak to no one but her immediate family, and not even to a family member when a stranger was present. Just the sight of an outsider changed her manner from fluent activity to quiet preoccupation. Her family physician referred her to the Psychology Clinic for evaluation and treatment. Although her mutism and withdrawal had caused innumerable inconveniences (e.g. when going to the doctor, or fitting her with shoes), it became a major problem as she approached elementary school age. The many attempts to get her to talk by parents, nursery school and kindergarten teachers, and playmates, had failed. Neither embarrassment, coercion, nor incentives affected her speech behaviour.

Physically, Sally was frail and appeared extremely fearful and tense in the presence of others. She had a long history of medical problems, stemming from a congenital heart defect, which necessitated regular physical examinations and tests, some of which were quite painful. This physical limitation probably inhibited the development of normal social and verbal interactive skills. Though she entered into most types of play, she tired easily, and consequently spent most of her time in the home with her mother.

Pre-treatment interviews

Prior to the treatment programme, three interviews were held with Sally's mother. She met twice with one therapist to discuss Sally's history and development, and once with the entire treatment team to establish a comfortable working relationship and to discuss plans for her participation in the treatment programme. Sally's mother was cooperative and seemed quite concerned about her daughter's welfare. No systematic attempt was made to assess family dynamics nor the psychological state of the parents.

Sally was seen with her mother on two occasions in a typical playroom situation. These meetings were held to determine if she would speak to a male therapist in her mother's presence, and if she could be persuaded to speak using common clinical procedures, such as puppets or free play. She did not speak either to the therapist or to her mother in his presence; nor could she be persuaded to speak through the use of typical clinical techniques.

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Treatment programme

Treatment was carried out in a playroom, containing only a table and chairs. An adjoining observation room was equipped with a one-way window, a tape recorder and an intercom for monitoring the sessions.

The treatment plan was based on the assumption that the presence of strangers aroused responses incompatible with speaking. These behaviours resembled fearfulness, anxiety responses, withdrawal, and quiescence. Desensitization, or fading-in techniques, similar to those used by Jones (1924), Wolpe (1958), and Wolf *et al.* (1964) were considered appropriate for modifying these behaviours.

Sally was brought to the Clinic without breakfast at 8 a.m. Her mother put breakfast on the playroom table, cutting a slice of toast and a banana into small pieces. The goal at this point was for her mother to establish a constant rate of speech by having Sally ask for bites of food. Sally and her mother were alone in the playroom at this time. Every 30 sec a tap on the observation window signalled her mother to ask Sally if she wanted a bite of food. An appropriate verbal request for food, including its identification, was required for receiving a bite. If no response occurred, the mother was to wait until the next tap and ask again. This stage of the programme lasted 5½ min or eleven trials, during which Sally responded appropriately on every trial with verbalizations ranging from "orange juice" to "I'd like some cereal please, Mummie".

The second step of the programme involved fading another person (E_1) into the playroom while Sally continued to ask for food. E_1 , a male, moved from a point in the hall to one of the chairs at the table by steps of 3 to 4 feet. There were ten positions through which E_1 moved, while pretending to read a magazine. The criterion for him to move to each closer position was at least four consecutive appropriate responses from Sally. A total of forty-three responses was required for E_1 to move from the hall to his seat by the table. Sally failed only one trial at this stage, and her verbal responses expanded from an average of 1.7 words for the first ten trials to 2.6 words for the last ten. Thus, she actually became more verbal as E_1 was faded into the room. A short break was then taken for rest and planning.

After the break, Sally, her mother, and E_1 returned to their seats at the table. It was not necessary to go through the fading-in procedure to reinstate Sally's speaking to her mother in the presence of E_1 . However, she did not talk to E_1 . The mother continued asking her if she wanted food at 30 sec intervals.

The third stage involved shaping Sally to look at, attend and respond to E_1 . This was accomplished by fading E_1 into the mother-child interaction in the following manner. At the 30 sec signal, E_1 asked mother, "Why don't you ask Sally if she would like another bite to eat?". The mother asked, and Sally responded. After two trials, E_1 directly asked Sally, "Would you like something more?". Sally responded appropriately. From this point on, E_1 asked Sally, at each 30 sec interval, if she wanted another bite to eat. It was noted that although Sally was responding to E_1 , she was not looking at him. After ten trials, E_1 moved his chair directly opposite Sally, so that she would have to look at him while requesting food. Within fifteen trials from the beginning of this stage, E_1 was carrying on a limited, highly structured, conversation with Sally. The procedure was continued for twenty-five

more trials. She failed to answer on two occasions, but when her mother repeated the questions, Sally responded appropriately. This stage accomplished the goals set for this day as Sally was, for the first time, talking with a stranger.* Another rest period was taken to plan a generalization programme.

Mother and E_1 returned to the situation and E_1 continued feeding and talking with Sally. At this point, E_2 , a woman therapist, was faded into the room in stages twice as large as E_1 had used. Within 7 min or fourteen trials, E_2 was seated at the table and Sally continued to respond to E_1 .

After another break, during which breakfast was removed, a test situation was contrived to see if verbal responding would generalize to a stranger who was not faded in, and who did not use food as an incentive. A male therapist (E_3) was seated at the table when Sally and her mother re-entered the room. Mother introduced him as "the Doctor". Immediately E_3 asked Sally about herself and about a puzzle that interested her. She played with the puzzle, putting in pieces, but avoided responding to, or making eye contact with, E_3 . Finally, after approximately 3 min, Sally responded to a question about a puzzle piece. Another response occurred 15 sec later, then responses continued at a fairly rapid rate E_3 made increasingly difficult demands on her, asking her to name parts and describe pieces of the puzzle. A story book was then used and Sally described Peter Rabbit. Finally the subject of food came up and several responses were made about food preferences. The rate of responding was never high, but Sally did answer numerous questions and went willingly from the room with E_3 to find a playmate. The test was considered a successful demonstration of generalization to a stranger without the use of the fading-in technique.

At noon Sally went to the house of another team member for lunch. She was accompanied by two female E 's and two small girls, aged 1 and $3\frac{1}{2}$. There was no hesitation to leave her mother behind, but some apprehension appeared as Sally entered the automobile. She had not met either woman before this time, but the presence of the other children probably helped her to enter the situation willingly. Soon she talked freely with the $3\frac{1}{2}$ -year-old child and sporadic conversation continued throughout lunch.

On her return to the Clinic, Sally went to her mother in the playroom and all seven therapists entered, together with Sally's playmate. A game was established between the children and E_3 , naming colours, asking questions and offering M & M candies. Another child, a boy, was then brought into the game, but Sally did not interact with him. Since the boy was also somewhat reluctant to interact, no communication was established between them, and Sally became tense until the session ended. Evidently, the candies were not powerful reinforcers so soon after lunch.

Follow-up

Two weeks later, Sally returned to the Clinic in order to test the durability of her progress in speech. In the playroom with mother and E_1 , Sally conversed

*The efficacy of the programme, in getting Sally to speak to E_1 , appeared to be a function of gradually associating E_1 (a previously ineffective stimulus, in terms of eliciting speech from Sally) with mother and food reinforcers (historically effective elicitors of Sally's speech). As this association was strengthened, E_1 became effective in eliciting speech from Sally.

easily for about 15 min. At this point another *E* entered the room and Sally immediately became tense and withdrawn but continued to speak to *E*₁. Food was brought in and the new *E* fed her some breakfast; within 7 min she was talking freely to him. Another *E* entered, but Sally did not stop responding. This *E* then took over the feeding and Sally continued to respond.

On this second visit, Sally's behaviour was qualitatively different. She was free and spontaneous, initiating topics and showing almost none of her typical fearfulness. The *E*'s she had talked and played with this time were two that she would not respond to previously.

A third meeting occurred the following week. Again, several *E*'s talked and played with her, but no food was used. Mother reported that Sally had begun to talk to people outside the family, e.g. to her Sunday school teacher and to friends of the family. Thus, it appeared that verbal responding was generalizing beyond the Clinic.

Future plans

In order to extend this experimental programme into a continuing treatment programme, it is planned that her social environment be re-programmed along the lines of Straughan's (1965) adaptation of Patterson's (1965) technique. This will consist of setting up natural contingencies for the reinforcement of verbal initiations and responsiveness to her neighbours and peers.

SUMMARY

A technique for using reinforcement and stimulus fading for generalization of speech in a selectively mute child is described. Seven therapists, two children, and the child's mother all worked in various sequential and group combinations in a short-term treatment programme.

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THE GROWTH OF THE CONTROL OF GRAMMAR IN IMITATION, COMPREHENSION, AND PRODUCTION

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INTRODUCTION

THE LITERATURE relating to the question of whether children can understand the language of others before they can produce the language themselves has been reviewed by FRASER *et al.* (1963). The paucity of research to support the opinions generally held led these authors to devise what they termed the *ICP* Test in which *I* indicates Imitation, *C* Comprehension and *P* Production. Twelve 3-year-old children, who were middle class, co-operative and living in Cambridge, Massachusetts, were tested on ten grammatical contrasts. There was clear evidence that in these subjects imitation was more advanced than comprehension, and comprehension more advanced than production (Fraser *et al.*, 1963). The authors also showed that the order in which the three tasks were performed was immaterial, and that after allowing for guessing on the tasks, the order $I > C > P$ remained.

The purpose of the present study was two fold. First, to trace the growth of the control of grammar in *I*, *C* and *P* in children from 2- to 6-years-of-age inclusive. Second, to test the following hypotheses:

- (a) that $I > C > P$ at all the age levels tested, both among normal children and among Educationally Sub-normal (ESN) Special School pupils aged 6 and 7 years;
- (b) that there is a very high correlation between the rank order of difficulty of the items of the three tasks at each age level, between the items of corresponding tasks at different age levels, and between the rank order of difficulty of items of a given task as between normal and ESN Special School children.

PROCEDURES

(a) *Materials and technique*

Sample utterances used in the present study and scoring for the test, are shown in Table 1.

For each contrast there are two utterance pairs for *I*, two for *C* and two for *P*. A few changes had to be made in the technique used by Fraser *et al.* For example, 'mummy' was used instead of 'mommy', a few pictures had to be re-drawn, and it was sometimes found better to accept 'doggie' and 'pussy' for 'dog' and 'cat' respectively. Again the original test made use of nonsense syllables for the mass-noun/count-noun contrast, because such words as 'some milk' (mass noun) and 'a cup' (count noun), are clear at the lexical level. The child would not need to know that a singular noun preceded by 'some' must be a mass noun, and that a singular

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TABLE 1. SAMPLE UTTERANCES AND SCORING FOR THE ICP TEST

Practice items

The girl with the big hat.
 The girl playing with the doll.
 The cat with the brown face.
 The boy playing with the truck.
 The boy with the red belt.
 The bunny eating the carrot.
 The dog with the black tail.
 The mouse eating the cheese.

(1) *Mass-noun/Count-noun*

Utterances: Some chicken—A chicken.
 Some string—A string.

Scoring: Some/A + any nonsense syllables or appropriate English words.

(2) *Singular/Plural, marked by inflections*

Utterances: The boy draws/The boys draw.
 The kitten plays/The kittens play.

Scoring: Noun without inflection and verb with -s/noun with -s and verb without inflection.

(3) *Singular/Plural, marked by "is" or "are"*

Utterances: The deer is running/The deer are running.
 The sheep is eating/The sheep are eating.

Scoring: Is/Are.

(4) *Present Progressive tense/Past tense*

Utterances: The paint is spilling/The paint spilled.
 The boy is jumping/The boy jumped.

Scoring: "Is" and verb with -ing/No auxiliary and verb with -d.

(5) *Present Progressive tense/Future tense*

Utterances: The girl is drinking/The girl will drink.
 The baby is climbing/The baby will climb.

Scoring: "is" and verb with -ing/Will and verb without inflection.

(6) *Affirmative/Negative*

Utterances: The girl is cooking/The girl is not cooking.
 The boy is sitting/The boy is not sitting.

Scoring: Absence of not/Presence of not, + some assertion.

(7) *Singular/Plural, of 3rd-person possessive pronouns*

Utterances: His wagon/Their wagon.
 Her dog/Their dog.

Scoring: His or her/Their.

(8) *Subject/Object, in the active voice*

Utterances: The train bumps the car/The car bumps the train.
 The mummy kisses the daddy/The daddy kisses the mummy.

Scoring: Noun₁ + active form of verb + noun₂/Noun₂.
 + active form of verb + noun₁.

(9) *Subject/Object in the passive voice*

Utterances: The car is bumped by the train/
The train is bumped by the car.

The daddy is kissed by the mummy/
The mummy is kissed by the daddy.

Scoring: Noun₁ + verb + d + by + noun₂/Noun₂ +
verb + d + by + noun₁.

(10) *Indirect object/Direct object*

Utterances: The girl shows the cat the dog/
The girl shows the dog the cat.

The boy brings the fish the bird/
The boy brings the bird the fish.

Scoring: Any verb + noun₁ + noun₂/any verb +
noun₂ + noun₁.

noun preceded by 'a' must be a count noun. When the utterances are 'some tiss' and 'a heg', Fraser *et al.* maintain that only the grammar of mass nouns and count nouns can guide the subject to the selection of an extended substance 'tiss' and a bounded object such as 'heg'. While the present writers agree with this it was found in a pilot experiment that the ESN Special School pupils were very uneasy about the use of these nonsense syllables. Accordingly the six nonsense syllables were replaced by the nouns 'paper, chocolate, tin, glass, string, chicken'. Whilst not nonsense syllables they make their contrast clear only at a grammatical level and not at a lexical one.

The *I* tasks require no pictures, the experimenter (*E*) speaks two utterances which are identical except for the grammatical contrast, e.g. 'The sheep is eating', 'The sheep are eating'. The subject is asked to imitate them one at a time following repetitions by *E*. The child's responses are scored only on his retention of the contrasting 'is' and 'are'. Incorrect rendering of the other parts of the utterance does not affect the score.

For each of the ten grammatical contrasts in the *C* task *E* shows two pictures, and pronounces two utterances, without indicating to which picture the utterances belong. Then one of these two sentences is spoken and the subject is asked to point to the corresponding picture, after which the other sentence is given, and again the child is asked to point. After a grammatical contrast has been dealt with in this way two new pictures are shown and the process repeated for the next contrast. The child is not required to speak at all, and the criterion for scoring is his correct selection of the appropriate picture.

In the *P* tasks new pictures are used. There are ten pairs of pictures to match the ten pairs of utterances grammatically equivalent to those used in the other tasks. For example, there were a pair of pictures to illustrate "The deer is running", "The deer are running" in order to match the pair of sentences used in the *I* and *C* tasks; i.e. "The sheep is jumping", "The sheep are jumping".

The procedures used, the order in which the contrasts were given, and the verbatim instructions given to the child, were exactly the same as used by Fraser *et al.* apart from two points. First, as already explained, nouns were used instead of nonsense syllables in the mass-noun/count-noun contrast; second, it seems that somewhat greater efforts were made in the present study to maintain the children's motivation, as will be explained later.

There are, in addition, four practice pairs using utterances that contrast even in their words and so are very obvious to the child, e.g. "The girl with the big hat". These proved very useful in gaining the confidence of the child, because he was so easily and obviously right in his selection of the pictures. The items were used in a different order at the beginning of each of the three parts of the test, so that the subject might be given some instruction in the procedure of that particular part.

The pictures, which were mounted on coloured card and covered with transparent adhesive film, followed the general principle that the representation of paired utterances should be identical in every respect except for the one coded by the grammatical contrast. The order of presentation of tasks and items together with the precise wording used is as exactly as described by Fraser *et al.* (1963).

It will be appreciated that it was imperative to get the maximum co-operation from the subjects. To obtain this the general approach to the children also differed from that of Fraser *et al.* All testing was done in the schools concerned, in a room in which only the child and *E* were present. In the nursery schools it was sometimes necessary for *E* to play first with the child in his own classroom, and to do this on a number of occasions, in order to establish the kind of relationship in which the child felt confident to leave his own room and go with *E*. Before actually presenting any of the three tasks a further effort was made to establish good rapport by showing the child (now in the room alone with *E*) a musical monkey, and allowing him to wind it up and listen to the tune a number of times. Those who were still shy or reluctant to talk were able to listen to the tune and cuddle the monkey, whilst the talkative ones had an interesting subject about which to chatter. It is our opinion that this preliminary exercise was extremely helpful as it enabled *E* to decide whether to begin with the *I*, *C* or *P* task first.

Some children were eager to see the pictures, but not very talkative, in which case the *C* task was first presented. Other children wanted to continue playing, in which case the *I* task was presented at suitable moments when the subject was not engrossed. Indeed it was found to be better to let many of the pupils, regardless of age, play with a toy during the *I* task no matter what its order of presentation. The testing session continued as long as the child remained co-operative and attentive, and when necessary the tasks were completed at later sessions. But care was taken to see that all three tasks were completed within one week.

The responses were recorded by hand, and in the case of the *I* and *P* tasks by means of a tape recorder as well, whenever this was possible. The recorder was hidden if at all possible, and few children discovered it.

(b) Subjects

Twenty children in nursery and infant schools were tested at each of the ages 2, 3, 4, 5 and 6 years. Their teachers were asked to select, at each age level, twenty

children representing a cross-section of ability as judged by them in the school situation. Forty pupils at each of the ages 6 and 7 years attending ESN Special Schools were also studied. In the case of the 6-year-olds it was necessary to test all those who could be found in the schools in two large cities since few children at 6 years of age are found in such schools. For the 7-year-olds it was necessary to take almost all the pupils in two ESN Junior schools in one of the cities. The mean Terman Merrill I.Q.s of the 6- and 7-year-olds were respectively 61.1 and 66.5 with S.D.s of 8.1 and 9.4.

The mean ages of the subjects at the various age levels were 2.6, 3.6, 4.6, 5.6, 6.6, also 6.6 and 7.6 years respectively. There were an equal number of boys and girls in each age group so that from the point of view of sex the groups were balanced. It was not our intention, however, to investigate sex differences in respect of our problem. The children were drawn from nursery and infant schools which contained rather more than their share of children from homes in Social Classes III, IV and V, so from the socio-economic point of view the better-off homes were somewhat under-represented.

RESULTS AND DISCUSSION

TABLE 3. NUMBER OF CORRECT RESPONSES TO THE TASKS OF IMITATION (*I*) COMPREHENSION (*C*) AND PRODUCTION (*P*) MADE BY THE E.S.N. PUPILS

Item	Age (years)					
	6.6			7.6		
	<i>I</i>	<i>C</i>	<i>P</i>	<i>I</i>	<i>C</i>	<i>P</i>
Affirmative/Negative	80	80	75	80	80	80
Subject/Object Active voice	73	70	70	78	71	70
Pres. Prog. tense/Future tense	77	69	17	80	70	23
Mass noun/Count noun	78	45	22	80	49	33
Sing./Plural of 3rd person						
poss. pronouns	77	50	32	80	71	46
Pres. Prog. tense/Past tense	70	61	8	79	55	16
Sing./Pl. marked by is and are	70	50	27	78	70	45
Sing./Pl. marked by inflections	56	38	4	66	39	7
Subject/Object Passive voice	37	4	1	62	12	0
Indirect Object/Direct Object	40	14	4	42	13	1

It is clear from Tables 2 and 3 that in not a single instance was the score for *C* in advance of that of *I*, or the score for *P* in advance of that for *C*. Moreover, although these tables show scores for age groups, the scores for no individual child showed any exception to this order. Again, the tables indicate that apart from the first two items, where maximum or near maximum scores were obtained, the score for *I* is greater than that for *C*, and the score for *C* is greater than that for *P*. The findings of Fraser *et al.* are thus confirmed over the whole age range 2-6 years in normal children and in the 6- and 7-year-old ESN pupils as well.

TABLE 4. MEAN SCORES AND STANDARD DEVIATIONS FOR IMITATION (*I*), COMPREHENSION (*C*) AND PRODUCTION (*P*)

Age		<i>I</i>	<i>C</i>	<i>P</i>
2	M	11.35	6.2	2.55
	S.D.	2.6	2.0	1.4
3	M	16.85	11.05	6.15
	S.D.	3.0	2.9	2.3
4	M	19.15	12.95	8.5
	S.D.	1.6	2.9	2.8
5	M	19.5	15.5	11.1
	S.D.	0.75	2.4	3.0
6	M	20.0	15.6	11.3
	S.D.	0.0	2.5	2.5
6 ESN	M	16.03	11.95	6.43
	S.D.	3.0	3.0	3.4
7 ESN	M	18.13	13.25	8.03
	S.D.	2.3	3.1	3.4

The differences between the mean scores (Table 4) on *I* and *C*, and between *C* and *P* were tested for significance at each age level both in the normal and ESN Special School children. Using *t*-tests all the differences were significant at the 0.01 level. These data confirm the hypothesis that imitation is more advanced than comprehension, and the latter more than production, in the subjects tested.

Spearman Rank Difference Correlation Coefficients, corrected for ties, were then calculated for the rank difficulty of the items as between *I* and *C*, *I* and *P*, and *C* and *P* at ages 2- and 3-years in normal pupils, and at ages 6 and 7 in the ESN children. As normal pupils nearly always obtained maximum scores at 4-, 5- and 6-years (Table 2) on the *I* items, at these ages correlations were made between *C* and *P* only. The ρ values obtained ranged between 0.86 and 0.98, with twelve of these coefficients being greater than 0.90. All fifteen coefficients were significant at the 0.01 level.

To test the hypotheses that the rank order of difficulty of the items remains fairly constant across the age groups, Spearman Rank Difference Correlation Coefficients, corrected for ties, were calculated in the following instances:

2 yr	<i>C</i>	<i>P</i>	3 yr	<i>C</i>	<i>P</i>
	and	and		and	and
5 yr	<i>C</i>	<i>P</i>	5 yr	<i>C</i>	<i>P</i>
2 yr	normal	<i>I</i>	3 yr	normal	<i>I</i>
		and			and
6 yr	ESN	<i>I</i>	6 yr	ESN	<i>I</i>
		<i>C</i>			and
		<i>P</i>			<i>P</i>

4 yr	normal	<i>C</i>	<i>P</i>
		and	and
7 yr	ESN	<i>C</i>	<i>P</i>

The twelve values of ρ varied between 0.87 and 0.99 with eleven of the values being greater than 0.90. All twelve were significant at the 0.01 level.

Furthermore, ρ values for the rank order of difficulty of items in the case of the 3-year-olds in the present study and the 3-year-olds in the study of Fraser *et al.* were:

$$\rho_{I \text{ and } I} = 0.81 \quad \rho_{C \text{ and } C} = 0.98 \quad \rho_{P \text{ and } P} = 0.88$$

It is clear from these data that the rank order of difficulty of the items remains very much the same across tasks, and for items within a task across the age groups tested. The Affirmative/Negative item is the easiest grammatical contrast, and the Subject/Object in the Passive Voice and the Indirect-Object/Direct-Object items, the most difficult contrasts. Table 4 reveals that the overall performance of the 6-year-old ESN pupils is almost exactly the same as that of normal 3-year-olds, while the 7-year-old ESN children responded much as the 4-year-olds. One interesting point is that the mean scores of the British 3-year-olds is a little ahead of the mean scores obtained by Fraser *et al.*, in spite of the fact that they came from homes less favoured from a socio-economic point of view. It might well be that the slightly greater forthcomingness of the British children was due to the great efforts made to establish rapport with them and to motivate them generally.

Table 4 also suggests that there is little increase in score on *C* and *P* between 5- and 6-years-of-age. This may be a point of some significance or it may be due to the fact that the two age groups were not strictly comparable in ability.

It is not possible at present to account for the order of difficulty of the items by any single dimension of the contrasts, as Fraser *et al.* point out. The Subject/Object contrast is probably easier in the active voice than in the passive voice because sentences in the passive voice are less frequently experienced in everyday life. The Singular/Plural contrast marked by *is* and *are* is probably easier than that marked by inflections, because the free morphemes are more clearly marked acoustically than the bound morphemes. Again, sheer length of sentence may be involved. Further research is required to elucidate the variables that determine item difficulty, but the present evidence, in which there are many wide discrepancies between the *I* scores on the one hand and the *C* and *P* scores on the other, does strongly support the view of Fraser *et al.* that imitation is a perceptual-motor skill that does not work through the meaning system to any great degree.

Since the *C* scores were higher than the *P* scores, it is clear that the child learns much about the rules that relate to referential patterning before he can produce the forms. This is entirely consonant with the view of Inhelder and Piaget (1959), Inhelder *et al.* (1966), that is the intellectual structure that determines the nature of the language that is used rather than the other way round.

In their paper Fraser *et al.* suggest that since 2-year-olds tend to 'reduce' model speech, i.e. drop the function words of a sentence leaving nouns and verbs, they may leave out the function words in the *ICP* test which are, in fact, the essential

elements of the test. If such happened, then the *I* scores might well be lower than the *C* scores, indicating that the 2-year-old can internally process more than he can 'print out'. Our evidence with the 2-year-olds does not support their suggestion, for these subjects behaved just as 3- or 4-year-olds did and maintained the relationship $I > C > P$.

SUMMARY

One-hundred children, between 2- and 6-years-of-age, and eighty children in ESN Special Schools aged 6- and 7-years, were tested on ten grammatical contrasts taken, with some amendments, from the *ICP* Test devised by Fraser *et al.* In all age levels, and in both categories of children, imitation is more advanced than comprehension, and comprehension is more advanced than production. Further, the rank difficulty of the items remains remarkably constant across tasks, across age levels for items within a given task, and for items within a given task across normal and ESN Special School pupils. The findings are generally consonant with Piaget's views regarding the nature of the relationship between language and thought.

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ATTENTION TO INFORMATION AS A FUNCTION OF AGE AND SPECIFICITY OF PROBLEM*

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THE FIRST aim of the present study is to investigate an hypothesis, derived from Piaget's work on conservation, concerning the development of attention in children. The second aim is to test an hypothesis concerning the effects of the examiner's communication on children's attention.

It seems possible to derive from Piaget's work on conservation certain generalizations concerning the development of attention in children. For purposes of illustration, we may consider the problem of conservation of continuous quantities (Piaget, 1952). Typically, the child is shown two beakers, *A* and *B*, of identical shape and filled with equal quantities of liquid. He is asked whether the amounts of liquid are equal. Then the liquid in *B* is poured into a third container, *C*, which is shorter and wider than *A* and *B*, and the question concerning amounts is repeated. At about age 5 years, the child maintains that although the amounts in *A* and *B* were equal, those in *A* and *C* are not. He fails to "conserve" the amounts of liquid. It is not until the age of 7 or 8 years that the child is capable of solving the problem.

Piaget seems to explain these differences in behaviour in terms of two factors, which we may call (a) focussing or attending to information, and (b) using the information obtained. First, "the [younger] child deals with only one of the two characteristics [here, height or width of the columns of liquid]. This is what I shall call a focussing of the attention on one . . . of the two characteristics. The child ignores the other . . ." (Piaget, 1960, p. 101). The initial step, then, in the case of the younger child, is to attend to a limited aspect of the information available (e.g. the heights of the columns of liquid). Piaget does not seem to mean that the child, initially, at least, fails to *see* both dimensions. The point is that the younger child attends *predominantly* to one of them, at the relative expense of the other. The second step, with which we will not be concerned here in detail, involves the simple rule employed by the child to process the limited information he has focussed on. The older child, on the other hand, first directs attention at both dimensions, with equal emphasis, and second, in processing this information, employs a more complex set of rules than did the younger child. Generally, we may conclude that in the conservation problem there appears to be an increase with age in the amount of information attended to.

We may then ask, how general is the above-mentioned tendency? Do younger children attend to limited amounts of information in situations other than those

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described by Piaget? One purpose of the present study is to determine whether the "relative attention hypothesis" accurately predicts children's behaviour in a haptic exploration task, which seems quite different from the conservation problem. In this task, blindfolded children at several age levels are presented with pairs of rectangles. In order to make various judgments concerning the rectangles, Ss are allowed to feel them. While the judgments *per se* are not our central concern, Ss' hand movements are of great interest. For in the context of the haptic exploration problem, attention to a limited amount of information may be operationalized in terms of the child's feeling only one dimension of the rectangles, whereas attention to a larger amount of information may be operationalized by the child's feeling both dimensions. These measures of attention have obvious methodological advantages. According to the relative attention hypothesis, younger children should tend to feel only one dimension, and older children two.

According to Piaget the younger child's tendency to attend to limited aspects of the available information represents the limit of his ability. "... the child at the first stage is *unable* to reckon simultaneously with the height and cross-section of the liquids he has to compare" (1952, p. 2, our italics). Thus, the young child is *incapable* of attending to larger amounts of information. By this, Piaget seems to mean that the younger child cannot choose to attend to several aspects of the problem in the absence of a direct instruction to do so, or special training. In other words, attending to limited information is the best the younger child can do without special help. He lacks the capabilities of the older child.

Several writers (e.g. Braine and Shanks, 1965) have argued that certain inadequacies in Piaget's methodology render doubtful his statements concerning the child's capabilities. This criticism raises the question: what procedures allow the investigator to make confident assertions concerning S's capability or lack of capability? We propose that, to estimate capabilities, *E* must communicate to *S* with a high degree of *specificity* with regard to the problem, and that transmission of the message must be *efficient*. Suppose that *E* wants to determine whether *S* is capable of strategy 1 and not 2 or 3. Under these circumstances, it would seem reasonable and obvious that *E* will attempt to communicate the problem in such a way that *S* understands that strategy 1, and not the others, is required. This might be done by directly informing *S* to employ 1, or, in an indirect fashion, by informing him that 2 and 3 are inappropriate. If *E*'s message is not specific in pointing toward use of 1, the child, even though fully capable of 1, might employ 2 or 3 instead—thus leading *E* to misjudge his capabilities.

In addition, the specific communication must be transmitted with efficiency. If not, the specificity of content may be lost. One commonly used method of efficient transmission is by means of language appropriate to the age of the child. A second method involves informative feedback (information concerning correctness of response). Braine and Shanks (1965) have argued, and produced evidence in support of their contention, that feedback may remove such ambiguity as may be initially associated with a question put to the child. Information feedback is necessary to "clarify" the question and to "provoke comprehension". We may note, however, that feedback does not always clarify matters. In the conservation problem, for example, *E* phrases his question in terms of amounts. If a child focuses on one

dimension of beakers A and B—an adequate solution—*E*'s feedback will not improve transmission, but instead confirm the utility of the one-dimensional procedure. A third method of efficient transmission seems to be by means of the stimuli employed in the assessment procedure. If the examiner is interested in the child's use of strategy 1, he ought to try not to employ stimuli which are compatible with, or suggest use of, strategy 2.

In the present experiment, an attempt is made to ascertain the effects of specificity of communication on children's attention. Children of various ages are presented with either a non-specific (NS) or relatively specific (RS) haptic exploration problem. In the case of the NS problem, the verbal instructions, the informative feedback, and the stimuli (certain kinds of rectangles) permit attention to a limited amount of information (feeling one dimension), or to a greater amount of information (feeling both dimensions). Use of either strategy leads to success. Under these circumstances, the capabilities of *Ss* may not be manifested. Even older children may attend only to one dimension, perhaps because it is easier to do so. This procedure is, of course, quite different from Piaget's. In the RS problem, however, the instructions, feedback, and stimuli (other pairs of rectangles) are intended to communicate to *S* that attention to limited amounts of information (feeling one dimension) is not adequate. This strategy will not lead to success. Under these circumstances, older *Ss*, who are presumed capable of the two-dimensional strategy, ought to use it, whereas younger *Ss*, who are presumed incapable of attention to greater amounts of information, should persist in a one-dimensional strategy. Thus, condition RS has the same aim as Piaget's clinical procedure: to get the child to deal with amounts. If the results show that young children in condition RS attend to greater amounts of information than reported by Piaget, then we may conclude that the clinical method is less than fully adequate for the assessment of capability. If, on the other hand, the present results and Piaget's are equivalent, then the clinical method may be deemed effective in the measurement of capability.

METHOD

Subjects

Ss employed in the experiment were selected from a larger group of children, all Negroes, to whom intelligence tests were given. At the age levels 5, 7, and 11, those children were chosen as *Ss* whose mean I.Q. yielded the best approximation to a desired value of 100. Also an effort was made to select only *Ss* whose I.Q.s fell in the range 84–116 (1 S.D. above and below the mean); a shortage of *Ss* at the 5-year level, however, made a few exceptions necessary. At the 5-year level, thirty-six *Ss* had a mean I.Q. (Peabody Picture Vocabulary Test) of 92.9, with range 80 to 127. At the 7-year level, thirty-six *Ss* had a mean I.Q. (California Test of Mental Maturity, short form, 1963) of 97.7, with range 84 to 110. Thirty-six 11-year *Ss* had a mean I.Q. (California Test of Mental Maturity) of 95.6, with range 84 to 112. The mean ages were 5.55, 7.88, and 11.89. At each age level, *Ss* were paired on I.Q. and assigned to conditions NS and RS. Thus, eighteen *Ss* were assigned to each condition at each age.

Apparatus

The apparatus consisted of solid masonite rectangles, a device for holding them, a blindfold, and cardboard boxes on which pictures of rectangles were pasted. The rectangles were constructed of $\frac{1}{4}$ in. masonite, and painted a uniform dark brown. They each had a 1 in. dowel glued to the rear, and pairs of rectangles were joined in the rear by a strip of wood attached to each of the dowels. The pairs were always joined in such a way that there was a 3 in. separation between them, the sides were parallel with one another, and the centres of each pair of rectangles were on a common plane.

There were four sets of rectangles, with four pairs of rectangles in each set. Table 1 lists the dimensions of the rectangles, and Fig. 1 illustrates one pair of each set. The pairs in sets 1 and 3 were equal in area; one member of each pair in sets 2 and 4 was double the area of the other. In set 1, the two rectangles of each pair

TABLE 1. PAIRS OF RECTANGLES EMPLOYED IN THE EXPERIMENT

	Left	Right
Set 1 a	14 × 11*	14 × 11
b	7 × 9	7 × 9
c	11 × 15	11 × 15
d	12 × 6	12 × 6
Set 2 a	13 × 20	9 × 14.4
b	16 × 19	11 × 13.8
c	11 × 7.6	14 × 12
d	12 × 9.9	17 × 14
Set 3 a	7 × 17	12 × 9.9
b	20 × 9	15 × 12
c	14 × 11	8 × 19.2
d	11 × 16	15 × 11.7
Set 4 a	15 × 6	12 × 15
b	9 × 20	12 × 7.6
c	19 × 12	7.6 × 15
d	7.7 × 13	20 × 10

*The first number always refers to the height in inches and the second to width in inches.

were identical; in set 2 one rectangle was always larger in both height and width by at least 3 in. In sets 3 and 4, one rectangle of each pair was taller than the other by at least 3 in. and the other was wider by at least 3 in. In set 4, half of the rectangles with greater area were taller, and half were wider. In sets 2 and 4, half of the rectangles with the greater area were on the right and half on the left. In set 3, half of the taller rectangles were on the left and half on the right. The exact dimensions

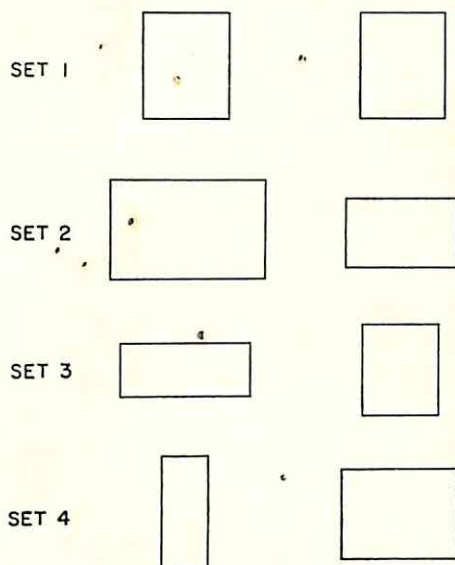


FIG. 1. Illustration of four sets (Scale: 1 in. $\equiv$ 3/80 in.).

of each rectangle were between 6 and 20 in., with height and width differing by at least 2 in. Dimensions of this magnitude were required, since, if they were smaller, *S* might unintentionally feel both dimensions merely by placing his hand almost anywhere on the rectangle. The dimensions were chosen by a random process, within the constraints of each set.

It will be seen that sets 1 and 2 are relatively non-specific, in that one set may be distinguished from the other on the basis of equality or inequality of heights alone or widths alone, or some coordination of heights and widths, or in other ways. They are similar to beakers *A* and *B* of the conservation procedure. Sets 3 and 4 are relatively specific in the sense that one set may be distinguished from the other only if both height and width are taken into account in some way. They are similar to beakers *A* and *C*.

The rectangles, stored on a table, were blocked from *S*'s view by a device for holding them which firmly supported each pair of rectangles in a vertical position. To the left and right of the device were two cardboard cartons. On the front of each were taped pairs of rectangles cut of brown blotting-paper. These were representative either of sets 1 and 2, or 3 and 4. The blindfold was constructed of taped-over ski-goggles, padded on the inside with foam rubber.

Procedure

In both conditions, an individual *S* was seated about 3 ft from the device for holding rectangles, and the two cartons—one on each side of the device. *Ss* in condition NS saw a set 1 pair and a set 2 pair of blotting-paper rectangles on the cartons. *Ss* in condition RS saw a set 3 and a set 4 pair on the cartons. *S* was first required to sort pairs of masonite rectangles visually, and then, after being moved close to the device and blindfolded, haptically. *Ss* in condition NS were presented

visually and haptically with the eight pairs of sets 1 and 2, and Ss in condition RS with the eight pairs of sets 3 and 4. There were ten different random orders of presentation of rectangles, with each S receiving a different random order for the visual and haptic presentations.

In condition NS, S was told: "Look at these boxes. They are make-believe cookie boxes. Only cookies like these [pointing to the set 1 blotting-paper rectangles] go in here, and only cookies like these [pointing to the set 2 blotting-paper rectangles] go in here. Now I'm going to show you some make-believe cookies two at a time, and I want you to decide whether they are like these cookies and go in this box [set 1] or whether they are like these cookies [set 2] and go in this other box. Just point to the box they go in." It should be noted that there was no suggestion that S should concern himself with "amounts". The expression "cookies like these" is quite ambiguous. Feedback was given on each trial ("that's right" or "that's wrong"). S was then blindfolded, and told to feel the "cookies" to find out which box they went in. Again, feedback was given. If on either the first or second haptic trial, S used random touches (that is, merely touched the centre of the rectangles), E told S not to use this procedure, and to try to find out which box the "cookies" belonged in by feeling them. It will be seen that this condition is relatively non-specific. E's verbal instructions, feedback, and the stimuli in no way communicated to S that use of one dimension was not a legitimate method of solution. S might accomplish the sorting on the basis of equalities and inequalities in height alone, width alone, or some combination of the two.

In condition RS, E said: "Look at these boxes. They are make-believe cookie boxes. See these two cookies [set 3 blotting-paper rectangles]; they have the same amount to eat. If you ate this one and I ate this one, we would both have as much to eat. But these two cookies here [set 4 blotting-paper rectangles] do not have the same amount to eat. If you ate one and I ate the other, one of us would have more to eat; we would not have the same. Now I'm going to show you some make-believe cookies, two at a time, and I want you to tell me whether they have the same amount to eat, like these, or not the same amount to eat like these." Again the child was told whether he was "right" or "wrong" on each trial. After the rectangles were sorted visually, the haptic series was presented. Condition RS is more specific than condition NS. In RS, E's instructions contained words like "same amount to eat", which were intended to convey to Ss that the problem concerned the global amounts of the rectangles, and that both dimensions were therefore likely to be relevant. The rectangles were such that equalities in heights and widths never occurred, and coordination of two dimensions was always required to achieve consistent success. Also, E's feedback was thought to inform Ss indirectly that use of one dimension, if employed, was inadequate to solution. Thus, condition RS is intended to achieve the same aims as Piaget's clinical examination.

Recording and scoring

The recorder (E for all Ss and an independent judge for a sample of twenty-five Ss) attempted to trace on paper a copy of S's hand movements on the rectangles. The recorder was careful to distinguish between one- and two-dimensional responses. The copy of S's response to each rectangle was scored (by E for all Ss, and by an

independent judge for a sample of eighteen) in three ways: two-dimensional (T); one-dimensional (O); or random touch only in the inside of the rectangle (R).

Most movements classed as T involved a single transit around the four edges of the rectangle. T also included cases in which the child felt all the way across the top of the rectangle, thus obtaining information on the relative height of the rectangle, and also its width. This method was used mostly in condition NS, by all age groups, with a small frequency in each case. Movements classed as O included cases in which the child's *only* hand movement on a rectangle was along the height (or width). Also included were cases in which the child merely touched the top of each rectangle in one spot, thus gaining information concerning the relative heights. Movements classed as R were always cases in which the child placed his hand only within the confines of the rectangles, thus getting no information whatsoever concerning their dimensions.

Reliability of recording and scoring

To assess agreement between judges, Scott's coefficient of agreement for discrete categories, π_i , was used (Scott and Wertheimer, 1962). In the case of recording π_i was 0.80, and for scoring it was 0.99.

RESULTS

The tendency to attend to greater or lesser amounts of information was examined by considering the number of rectangles in which S s felt only one dimension (O). Since each S felt eight pairs of rectangles, O scores may range from 0 to 16. A 2×3 analysis of variance (conditions NS and RS, by ages 5, 7, and 11) was performed on the O scores (Table 2). The main effect of condition ($F = 6.75$, $df. = 1, 102$

TABLE 2. ANALYSIS OF VARIANCE OF O SCORES

Source	SS	df.	MS	F
A (condition)	181.48	1	181.48	6.75*
B (age)	233.35	2	116.67	4.34*
AB	31.46	2	15.73	<1
error	2,741.56	102	26.88	

* $P < 0.05$.

$P < 0.05$) was significant, as was the main effect of age ($F = 4.34$, $df. = 2, 102$, $P < 0.05$). Contrary to appearances, the interaction was not significant. The means of O , as well as those of T and R , are presented in Table 3.

With regard to the effect of age, the Newman-Keuls procedure (Winer, 1962) reveals that 5-year S s in general showed a significantly greater amount of one-dimensional strategy than the 7-year ($P < 0.05$) and 11-year ($P < 0.05$) S s, while the latter groups did not differ significantly from one another. Moreover, the 5-year group showed, in absolute terms, a substantial amount of one-dimensional strategy (almost half their responses), whereas in the 7- and 11-year groups only about a quarter of the responses were O . If one considers the number of rectangles in which S s felt two dimensions (T), the same pattern of results emerges. Five-year

TABLE 3. MEANS AND S.D.'s OF NUMBER OF TIMES Ss FELT ONE DIMENSION, TWO DIMENSIONS, OR USED RANDOM TOUCHES

			Age		
			5	7	11
One dimension	NS	mean	7.61	5.55	5.61
		S.D.	5.22	5.68	5.71
	RS	mean	6.44	2.72	1.83
		S.D.	5.24	4.98	4.09
Two dimensions	NS	mean	4.61	10.44	10.39
		S.D.	5.57	5.68	5.71
	RS	mean	6.55	13.28	14.10
		S.D.	6.69	4.98	4.19
Random touches	NS	mean	3.78	0	0
		S.D.	5.75	0	0
	RS	mean	3.00	0	0.05
		S.D.	4.85	0	0.24

Ss show a small absolute amount of two-dimensional strategy (about one third of the responses), while the 7- and 11-year groups display about two thirds of *T* responses. These results indicate a general developmental progression in attention to greater amounts of information, over both conditions combined, and consequently support Piaget's theory.

As regards specificity, Ss showed more one-dimensional strategy in condition NS than RS, a finding consistent with the specificity hypothesis. This same result may be seen in the data on *T* responses. While specificity of communication has a demonstrable effect, it is clear from inspection of Table 3 that the effect is not always of great magnitude. In the case of 5-year-old children, condition RS produced only about one *O* response fewer than condition NS, and only about two *T* responses more than condition NS. In the case of the older children, the differences in both *O* and *T* responses between the conditions were somewhat greater. In other words, despite the increased specificity, younger children especially continued to show substantial amounts of one-dimensional strategy. It is also interesting to note that in the non-specific condition, both 7- and 11-year Ss displayed a small amount of one-dimensional responses. Thus, ontogenetically "primitive" behaviour may be seen in older children, under certain conditions.

In the 5-year group, twelve Ss, six in each condition, used *R* (random touches) to a substantial degree (mean *R* for these 12 Ss = 10.08). In the 7- and 11-year groups, only one *S* displayed one *R*. These Ss probably did not understand that feeling the rectangles was instrumental to solving the problems. If, on the basis of this misunderstanding, Ss using *R* are eliminated from the analysis, the results are not materially affected—the same *F* ratios are significant in each case.

In regard to the number of problems correctly solved, the results showed, as would be expected, that older children (ages 7 and 11) were significantly more successful than the 5-year-olds; and that performance in condition NS was signifi-

cantly better than in RS. The findings will not be discussed in detail since the experiment did not provide firm information concerning Ss' strategies of solution (the rules used in processing the information).

DISCUSSION

The results indicate that the relative attention hypothesis successfully predicts behaviour in a task different from that normally employed by Piaget. The hypothesis may be said to have some generality. Five-year-old children, in agreement with Piaget's hypothesis, attend to smaller amounts of information than do children of ages 7 and 11. Young children incorporate less of the available "data" than older ones. It remains for further research to investigate the power of the hypothesis in predicting behaviour in still other tasks. Another question concerns the generality of the phenomenon across a variety of socio-economic groupings. The present Ss were Southern American Negroes, generally lower class. While there is no *a priori* reason to suspect that such a sample is unusual with respect to Piaget's stages, information on the behaviour of other groups would be of value.

Another conclusion is that methods involving relatively high specificity and efficiency of transmission have a significant effect on Ss' performance. These methods, by clearly delineating the nature of the problem to be solved, seem generally to elicit from Ss a higher level of problem solving activity than do methods which are less clear. When non-specific or ambiguous methods are employed, even older Ss display some ontogenetically primitive behaviour.

While the effects of specificity were statistically significant, the absolute amount of improvement produced, especially in the case of 5-year-olds, was not always great. Even though 5-year-old children showed *less* one-dimensional strategy in the relatively specific condition than in the non-specific, their absolute level of one-dimensional response is still fairly high (and conversely their absolute level of two-dimensional response is still fairly low) in condition RS. Thus, the results of the present experiment largely support Piaget's views concerning the capability of the 5-year-old child. It would seem as if Piaget's clinical method, which has often been criticized, is quite effective in its "diagnosis" of capability. Fleischmann *et al.* (1966), studying conservation, have come to exactly the same conclusion.

The results concerning specificity seem to have implications beyond the methodological sphere. As Piaget has perhaps not sufficiently emphasized, children may be characterized by several problem solving strategies simultaneously. In the case of older children particularly, when the environment is such that either ontogenetically primitive or advanced strategies are adequate for solution of a problem, then the primitive strategy is sometimes employed. If the environment is made more demanding, so that only the advanced strategy works, then the advanced solution tends to be employed. While developmental level is undoubtedly influential in determining the child's response, one must in addition consider situational factors, like the mode of presentation of the problem. As Lewin (1951) has emphasized, behaviour is a function of the total situation. Further, while most emphasis has thus far been placed on the child's cognitive capabilities, the study of those strategies which are used in an unstructured situation seems quite interesting in its own right. One reason is that the environment does not always pose specific problems.

SUMMARY

The present experiment provides a test of two hypotheses, the first of which was derived from Piaget's work on conservation: (a) there is an increase with age in the amount of information attended to; (b) the more specifically and efficiently a problem is communicated to *S*, the more likely it is that he will respond at his highest level of ability. The results substantially confirmed the hypotheses. Implications of the research were discussed.

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ALLEVIATION OF READING DIFFICULTIES BY A SIMPLE OPERANT CONDITIONING TECHNIQUE

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A MULTIPLICITY of reasons lie behind the difficulties encountered by many children of average intelligence in developing the reading habit. In some, there may be minor organic anomalies, or slowness in maturation, to explain the inefficient and distorted recognition of visual symbols (Worster-Drought, 1965). In others, behaviour disorders may be accompanied by general educational retardation, including reading disability (Stott, 1956). In a large number of timid, unassertive children, there are emotional components of a traumatic nature, embedded in the sentiment structures of the child, which undermine the motivation to learn, and engender feelings of anxiety, tension, and lack of self-confidence (Burt, 1937). When faced with any situation outside his previous experience, a sensitive child with emotional problems is greatly handicapped in the process of accommodation to demands made of him by the acquiring of a new skill. He may often feel distinctly threatened by his environment.

For some children the presentation of any written or printed material (however simple) may come to act as a conditional stimulus which evokes a feeling of anxiety, accompanied by intense autonomic reactivity. A child's original neurotic fear of any new experience can lead to expectation of failure upon introduction to reading material. This response set may, or may not, be confirmed, depending both upon the intelligence of the child and upon the amount of time at a teacher's disposal to ensure that easily discouraged pupils have extra grounding in the basic principles. The teacher's personality will also create a profound effect upon such children. It can well be imagined that an impatient, authoritarian attitude might make a disastrous impact. The unconditional response of fear of the teacher, or simply of the unknown, is likely to be associated with the reading material, which will then assume the quality of a conditional stimulus. Each fresh attempt to improve a child's performance will result in an actual reinforcement of his anxiety and tension. Some means of interrupting this vicious sequence is imperative. The usual therapeutic endeavours are aimed at reducing the general anxiety level by invoking changes in the child's home and school environment, and by individual psychotherapy in the clinic. Remedial lessons may be introduced gradually, after a satisfactory and warm relationship of mutual trust has been established with the child.

Reports of the success of instrumental conditioning techniques with reading disabilities (Staats, 1962; Rachman, 1962) are immensely encouraging for educational psychologists. They offer the advantages of a direct attack upon the problem, combined with the expenditure of a minimal amount of the clinician's time (a precious commodity in areas where there is a staff shortage). A case is reported here

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of an attempt to treat a highly anxious boy of low reading ability by an operant conditioning technique employing both reward conditioning and avoidance conditioning.

CASE HISTORY

John was an 11-year-old boy who was referred to the clinic on account of his low educational attainment, poor reading ability, stammering, and occasional enuresis. His mother reported a normal pregnancy, but a forceps delivery after medical induction. He was 8 lb at birth. He had been bowel-trained by 2, but had always been inclined to wet the bed at night. He was slow to develop speech, and remained incomprehensible until 3 years of age. He could speak normally by the time he reached school age, but his stammer began in the first year at school. He had two younger sisters (10 and 8 years of age at the time of interview). The mother claimed she had always made a special effort to handle and love her son so that he would not feel displaced. She was not a punitive person, and was not unduly perturbed about his enuresis and stammering. By contrast, his father (who was a Works Study Officer) had rather high expectations of him in his school work, and had at one time pressured him quite severely. He was especially disappointed by his son's low educational attainment. The mother commented that the boy stammered more noticeably after his father reprimanded him for something.

At interview, John was found to be highly anxious and introversive, with marked feelings of inferiority, insecurity, and lack of self-confidence. He was not overtly agitated, but stammered badly when tense. He looked frail and gawky, and appeared to be slower in comprehension than his average intelligence scores indicated. It was not felt that any psychiatric treatment was required, as the emotional problem concerned home management. The parents (in particular, his father) were encouraged to adopt a less demanding and more sympathetic attitude towards him, so that he might be allowed to gain confidence in himself. The enuresis was spasmodic, and related to stressful experiences; no medication was therefore recommended. It was noted that his stutter was scarcely perceptible once he had relaxed, but it was considered likely that it would always be present whenever he became anxious and confused.

The case was transferred to the author for remedial lessons and therapy combined. The possibility existed that improvement in his reading ability might have a chain reaction in bolstering his ego and subtracting from his environment some of its threat, thereby reducing some of the neurotic tension and anxiety he was experiencing.

TEST RESULTS

Stanford Binet (Terman and Merrill, 1961): I.Q. 104.

Ravens Coloured Matrices (Raven, 1963): 75th Percentile I.Q. approx. 110.

Burt Vernon Graded Word Reading Test (Vernon, 1938): 8 years 1 month.

PROCEDURES

A series of graded reading books was selected, extending from just below the level of the patient's ascertained reading age to a 9-year plus level in vocabulary. Stott's (1962) "Micky" series formed part of the continuum.

The first 3 months (a) were spent entirely on phonic reading methods of the "look-say" variety. Each weekly $\frac{1}{2}$ -hr session was initiated by a 10-min period of supportive therapy in which the boy was encouraged to discuss the difficulties he had encountered in school, or at home, during the preceding week. A fairly good relationship was formed, though the boy remained somewhat unforthcoming, and continued to stammer badly both when reading and when talking about his various experiences.

In the second 3-month period (b) it was decided to introduce the dual operant conditioning techniques described below. Within 2 weeks the boy spontaneously

confided that he felt much more relaxed in the classroom when reading, and did not dread the opening of textbooks with such marked trepidation as before.

In the third 3-month period (c) the avoidance conditioning method was dropped when John became more interested in the content of what he was reading and less intent upon the mechanics of the procedure. It was felt that the employment of both techniques at this stage was slowing down his rate of reading, thus causing him to lose interest in the stories. If anything, the omission of the avoidance procedure appeared to accelerate his progress in reading, and no subjective emotional repercussions were reported. An alternative explanation might be that his motivation was improved by encouraging his concentration on the content of what he was reading, rather than the form.

A monthly check of his reading level was made by means of the Burt Vernon (1938) graded reading list.

APPARATUS

(a) A wooden pencil-box was converted into a register of the pupil's success in reading words, by the simple expedient of installing within it a flat 4-V battery connected to six bulbs inserted through the lid. Each bulb was controlled by a separate switch operated manually by the psychologist. Following the dictum of Rachman (1962), correctly read words were rewarded in a fixed ratio of 1 : 6 by illuminating a bulb. Whenever all six lights were on together, a sweet was handed to the subject and a few words of praise and support given, whilst he masticated slowly in a relaxed position in his chair. The lights were then extinguished, and the process repeated.

The ratio of words rewarded was gradually increased, until it was felt the child was able to read complete sentences without error. Thereafter, a reward light was used progressively to signal:—

- (1) one sentence correctly read (of varying length),
- (2) two sentences correctly read (of varying length),
- (3) three sentences read correctly (of varying length),
- (4) one paragraph correctly read (of varying lengths).

(b) A loud buzzer (attached to the "bell and pad" equipment for dealing with enuresis) was used as a signal of failure for a mis-pronounced word. Again it was operated manually by the psychologist. Correct recognition and enunciation were rewarded by the non-application of the buzzer. The child was able to avoid the failure signal by slowing down his articulation and by paying closer attention to the verbal symbols he was interpreting. This was designed to reduce the number of projected wrong interpretations he had been inclined to make, based upon the initial letters of words. The avoidance conditioning was applied concurrently with the reward conditioning.

RESULTS

The treatment spanned 9 months altogether, but consisted of only one $\frac{1}{2}$ -hr session per week, excluding school holidays, illness, and other unavoidable absences. The total time involved was therefore only $17\frac{1}{2}$ hr. Table 1 indicates the almost total failure of attempts to increase his reading ability during the first 3 months, and the marked improvement which occurred after the introduction of the operant

conditioning approach. It can be said that effective treatment spanned only 6 months (total time 11 hr), and that in that period his reading age increased by more than one year.

TABLE 1. INCREASE IN READING AGE THROUGHOUT THREE TERMS OF TREATMENT IN THE CLINIC

	Conditions	Months	Total session time	Reading age	Reading gain
Period A =	Phonic	Sept. } Oct. } Nov. }	6½ hr	8 yr 1 mth } 8 yr 1 mth } 8 yr 2 mth }	1 mth
Period B =	Reward + Avoidance conditioning	Dec. } Jan. } Feb. }	6 hr	8 yr 5 mth } 8 yr 6 mth } 8 yr 6 mth }	4 mth
Period C =	Reward conditioning	Mar. } Apr. } May }	5 hr	8 yr 10 mth } 9 yr 1 mth } 9 yr 3 mth }	9 mth
TOTAL =	—	9 mth	17½ hr	8 yr 1 mth 9 yr 3 mth	1 yr 2 mth

The boy's parents moved from the area shortly after the termination of period (c), and the last few sessions prior to their removal were spent, at the boy's own request, in the reading of an enjoyable adventure story without the aid of the conditioning apparatus. Since the case had been referred partly on account of the boy's reading difficulties, it could be said that the remedial treatment had been specifically successful in reducing them. He was able to read beyond the 9-year level, and though this still left him retarded so far as his mental capacity indicated, the difference was largely one of extent of vocabulary. He was able to spell out and pronounce words like "curriculum" or "melancholy", though he did not know what they meant and claimed that he had not heard them before.

Subjectively, he had commented upon feeling better disposed towards reading after only 2 weeks' treatment by the conditioning method. His stammer showed some improvement when he was reading aloud, but remained very marked in ordinary conversation. His enuresis remained spasmodic, though in period (c) he reported only one instance in 3 months, compared with 2 in period (a) and 3 in period (b).

It is important to note that during the second week of the third period of treatment he reported a sudden speech and reading relapse. He had apparently been asked to read an extract to the class, and had been unable to do so because of a sudden return of fear of the situation, with a consequent increase in stammering. It is perhaps significant that this incident occurred a few days after the psychologist had been forced to break an appointment with John, who nevertheless waited for almost an hour in the hope that he would appear. The absence of the reassuring weekly session, plus the break in the relationship of trust with the psychologist, may have combined to reawaken his lack of self-confidence.

Interestingly, his reading progress was not affected, and he had again succeeded

in increasing his reading age level at the end of the first months of period (c). The avoidance procedure was also omitted during this period, with no obvious emotional repercussions. It is therefore difficult to say whether there was much advantage in using this technique as well as the reward conditioning procedure. The boy seemed to progress rather faster with one method alone.

DISCUSSION

Perhaps the greatest advantage of this approach is that it gains the therapist an immediate foothold behind the defences of the subject. It has the qualities of a game which can be played *together*, thus destroying the "You/Me" barrier at the outset. Instead of a chore, the task of reading becomes a challenge and a pleasure. Partial reinforcement of success ensures that there is no rapid habituation to the series. The pupil receives the encouragement of (a) visible evidence of his progress (lights); (b) material reward for his efforts (sweets); and (c) the approval and support of the therapist acting as a social reinforcing agent.

It is a method which may not work with some children, and may have limited usefulness with others; but there can be little doubt that such procedures ought to be standard skills in every clinician's repertoire, to be employed whenever relevant and effective. Such techniques may work better where a subject already has some understanding of the basic mechanics of reading (a reading age of over 8 years). Anxiety can then be regarded as an intervening variable. When it is successfully suppressed, a rapid improvement in reading level may occur.

Main advantages

(1) The method succeeded in improving the reading age of this boy, where more traditional methods had negligible effect.

(2) There was a reduction in the amount of tension elicited by written material. His stammer was not so noticeable when he was reading aloud.

(3) The rewarding of the alimentary system with sweets, after a successful reading sequence, militates against the arousal of the defensive system (sympathetic nervous system) of the body, and allows pleasure instead of fear to be associated with reading material.

(4) The small amount of time spent in each session was well rewarded in terms of reading gain alone.

Main limitations of operant conditioning technique

(1) The boy's stammering was not improved in ordinary conversation. This suggests that generalization did not occur. The reduction in anxiety concerning the reading situation was not related to a corresponding reduction of anxiety about inter-personal relationships. No clear influence was exerted on his enuretic tendency, though he did report only one instance of wetting in the last period of treatment.

(2) The technique is not as simple and objective as it may appear. This success was not obtained by an automated process to the exclusion of the inter-personal relationship between patient and therapist. The apparatus seemed to have a therapeutic value in helping to improve the quality of the relationship established between the therapist and the pupil. But when the relationship was threatened by the non-

appearance of the psychologist for one session, the result was a severe loss of his self-confidence and a resurgence of his fear of the reading situation.

Since school holidays, and his own illness during 2 successive weeks, also interrupted John's weekly treatment without adverse influence, it was clearly not a simple lack of reinforcement that caused his relapse on the occasion reported. It was perhaps the weakening of his trust in the reliability of the therapist (upon whom he had become dependent) that appeared to result in an emotional crisis. When the onus for discontinuance was on an objective source (school authorities and holidays), or upon himself (illness), there was no trauma. It should be remarked that the relapse was not serious, and did not affect his actual reading progress.

In spite of the crudity of the apparatus used in this case, there was a fair measure of success. A fully automated procedure might have been more efficient and even less time-consuming in teaching reading skills, but absence of such equipment need not deter clinical therapists from attempting application of the principles of operant conditioning. It is to be noted, however, that the effects of improved reading level did not generalize to John's emotional attitudes outside of the reading situation.

SUMMARY

A boy suffering from anxiety, lack of self-confidence, enuresis, and stammering, showed a marked reading disability. Three months of remedial teaching and supportive therapy in a child guidance clinic failed to make much alteration in his progress. An operant conditioning procedure was then utilized, and resulted in an almost immediate improvement in his reading age. He also reported being less upset in the classroom when asked to read. His stammer became less noticeable on those occasions. However, his general anxiety level, enuresis, and stammering during ordinary conversation, did not change appreciably. Reward conditioning alone seemed to be as effective in improving his reading age as the dual technique combining reward and avoidance conditioning.

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THE CONTRIBUTION OF OBSTETRIC COMPLICATIONS TO THE ETIOLOGY OF BEHAVIOUR DISORDERS IN CHILDHOOD

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ROGERS, Lilienfeld and Pasamanick (1955) established the fact that among children with behaviour disorders a significantly greater proportion were premature or had been exposed to complications of pregnancy and delivery than among a control group of children. Since then the view has been expressed repeatedly (Stott 1962, 1965) that childhood behaviour disorders in general are based on some ill-defined, congenital vulnerability to which birth injury makes a major contribution. Pasamanick's (1956) hypothesis of "a continuum of reproductive casualty" has facilitated the development of the notion that in childhood every disorder is related to every other one and that birth injury, constitutional vulnerability, social deprivation and emotional traumata, all make significant but nonspecific contributions to psychiatric morbidity.

Certain facts that emerged from the original Baltimore Studies (Pasamanick *et al.* 1956, 1959) require to be emphasized. (1) The differences in frequency of perinatal complications between negro and white sections of the population were far greater than the perinatal differences between behaviourally disturbed and non-disturbed children. (2) Although the differences between the experimental and control groups were statistically significant, each type of obstetric complication occurred in an eighth or less of disturbed white children and in a third or less of disturbed negro children. (3) It was only when obstetric complications were totalled up for each case that one or more complications were found to have occurred in a third of the white and in about two thirds of the negro disturbed subjects. But, when this procedure of adding complications was used, no less than a quarter of the white and a half of the negro control children had also been exposed to one or more obstetric complications. (4) The disturbed group included all children with behaviour disorders who had been referred to the Division of Special Services of the Baltimore Department of Education and who were not mentally retarded. They were presumably mainly children identified as disturbed in the school setting rather than by their parents at home. When children classified as "confused, disorganized and hyperactive" were looked at separately, it was found that the difference in frequency of obstetric complications between these children and their controls was even greater than between the experimental and control groups as a whole. Even Pasamanick (1956) suggested that birth injury may contribute more to some types of behaviour disorders than to others.

The present paper is a report on the frequency of obstetric complications in

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100 children referred to a psychiatric department diagnosed as having reactive psychiatric disorders, and in a matched control group of non-referred children. It is part of a larger comparative study of behaviour disorders and their background in Edinburgh primary school children (Wolff 1967).

THE SAMPLES

Two treatment facilities for psychiatrically disturbed children exist in Edinburgh: the Educational Child Guidance Clinic and the psychiatric department at The Royal Hospital for Sick Children. Referrals to the Child Guidance Clinic are in the main initiated by teachers; referrals to the hospital department by general practitioners and paediatricians. The latter department thus caters largely for children identified as disturbed by parents, and it is from here that the sample of referred children, the "clinic group", was drawn.

The clinic group consisted of 100 consecutive referrals of children attending primary schools within the city of Edinburgh. Excluded were children whose present I.Q. was under 80, children with diagnosed minimal brain damage (three), with schizoid personality disorder (two) and with specific reading difficulty but no behavioural problems (one). In addition four children attending schools for the maladjusted were excluded because no suitable controls were available for them, and, since mothers were to be the main informants, we excluded also children who had no mother figure (one in an institution, two with fathers only, and one with only a grandfather). Of 104 mothers asked to take part in the investigation, 100 agreed to do so.

The control group was made up by selecting from the class register of each clinic another child of the same sex and age whose father's occupation was similar to that of the clinic attender. Only three of 100 control mothers refused to co-operate and these were replaced with alternative controls who had been chosen at the same time.

Matching for sex, age and occupation of head of household was good. There were sixty-two boys and thirty-eight girls in each group. The mean age of clinic child attenders was 8.4 years (range 5.3 - 12.5) and of controls 8.3 years (range 5.3 - 12.5). Table 1 shows the social class distribution using the Registrar General's 1960 classification of occupations.

TABLE 1. OCCUPATIONAL CLASS

Occupational class of head of household	I	II	III	IV	V
Clinic	8	14	54	18	6
Control	8	13	51	19	9

That matching for social class was in fact effective was confirmed by the findings that the educational levels of mothers and fathers were similar in the two groups as were the sizes of the sibships of both parents (Tables 2 and 3).

TABLE 2. EDUCATIONAL LEVEL OF PARENTS

	Mother		Father	
	Clinic	Control	Clinic	Control
Left school before statutory school leaving age	3	7	2	—
Left school at statutory school leaving age; no other training	66	68	44	47
Left school at statutory school leaving age and completed apprenticeship	6	3	31	30
Stayed on at school at least 1 year after statutory school leaving age <i>OR</i> did full time non-academic course for at least one year e.g. secretarial course (Exclude incomplete nursing training)	15	15	12	13
Completed professional training other than at university, e.g. nursing, chartered accountant	3	6	2	5
At least one year of university training completed	7	1	7	5
Not known	—	—	2	—

TABLE 3. SIZE OF SIBSHIP OF PARENTS

Size of Sibship	Mother		Father	
	Clinic	Control	Clinic	Control
1, 2 or 3	47	46	51	47
4, 5 or 6	35	31	29	35
7 +	18	23	18	18
Not known	—	—	2	—

METHOD

The main method of enquiry was a focussed interview with the mother carried out by the author. It covered four areas: (1) the child's behaviour within the past six months, (2) adverse events in the life of the child including an obstetric history (Appendix A), (3) adverse events in the childhood of each parent, and (4) the parents' psychiatric status.

In addition school teachers were asked to complete questionnaires for each child, and all hospital records of the child's birth and subsequent hospital attendances were examined as far as possible.

It had been hoped initially that rating scales of the severity of obstetric hazards could be based on the findings of the Perinatal Mortality Survey (Butler and Bonham, 1963; Feldstein and Butler, 1965; Feldstein, 1965). Complications of pregnancy and delivery that carried a high risk of perinatal mortality, it was thought, could legitimately be regarded as also carrying a high risk for impairment short of death. So far, however, the multivariate analysis of the data collected in the perinatal mortality survey is incomplete, so that the individual contribution of each obstetric

complication to perinatal mortality is not yet known. Consequently the rating scales used in the present study had to be empirical.* (See Appendix B.)

Data analysis was done on the Chilton Atlas-computer with a survey program written by Rees (1964). Differences between clinic and control groups were calculated using Kendall's rank correlation method (1948). In addition, Stuart's test allowing for the effects of matching, but applicable only to 2×2 tables, was used to test for differences in factors suggestive of an abnormal foetus, complications of pregnancy, complications of delivery and the post natal condition of the baby. (Stuart, 1957.)

(1) *Place of birth*

Significantly more clinic children were born in hospital than were controls. In the clinic group eighty-four children were born in hospital, four in nursing homes or homes for unmarried mothers and twelve at home. The corresponding figures in the control group were seventy-three, four and twenty-three ($\tau = 0.1364$, $P < 0.05$).

There was a slight but insignificant excess of first-born children in the clinic group (44 : 35). In both groups the majority of first-borns were delivered in a hospital or other institution (40 : 34). The difference between the groups is more striking for later born children. Of fifty-six in the clinic group only eight (14 per cent) were delivered at home while of sixty-five later born control children twenty-two (34 per cent) were born at home ($\tau = 0.2265$, $P < 0.01$). Moreover, although clinic mothers did not have significantly more subsequent children than controls, they had significantly more subsequent hospital admissions for childbirth ($\tau = 0.1938$, $P < 0.01$). These results are in line with the finding that clinic mothers made generally more demands on hospital services both for themselves and their children than control mothers.

(2) *Sources of obstetric data*

For twelve clinic and twenty-three control children born at home no information was available other than that from the mothers. In two further clinic cases and four controls no hospital records could be traced at all. In eighteen clinic and seven control cases obstetric records were incomplete. Complete records were available for the pregnancy, the birth and the infant's condition after birth in sixty-eight clinic and sixty-six control cases. Thus slightly more medical information was available for the clinic mothers. This would tend to bias the results in favour of finding more obstetric complications, at least of a minor sort, in the clinic group.

(3) *Maternal age*

Table 4 shows that maternal age at the birth of the child was similar in clinic and control groups.

(4) *Number of miscarriages*

More clinic than control mothers (nineteen compared to thirteen) had had miscarriages prior to the birth of the child studied. This is in line with the findings

*They were devised in collaboration with Dr. C. M. Drillien, Department of Child Life and Health, University of Edinburgh.

TABLE 4. MATERNAL AGE AT BIRTH OF CHILD

Maternal age	<20	20 <25	25 <30	30 <35	35 <40	40 <45	45 +
Clinic	8	26	35	15	11	4	1
Control	5	28	32	22	11	2	—

of Rogers *et al.* in Baltimore (1955). Subsequent miscarriages also were more common in the clinic group (eighteen compared to ten). Table 5 shows the total number of miscarriages reported.

TABLE 5. TOTAL NUMBER OF MISCARRIAGES

	None	One	Two	Three
Clinic	63	21	14	2
Control	77	17	4	2

$$\tau = -0.1582, P < 0.02.$$

(5) Birth weight

Table 6 shows the distributions of birth weight in the two groups of children. They did not differ significantly.

TABLE 6. BIRTH WEIGHT

B.W. (lb)	>3-4	>4-5	>5-6	>6-7	>7-8	>8-9	>9-10	>10
Clinic	1	4	12	23	36	13	10	1
Control	1	2	8	28	36	17	8	—

(6) Factors suggestive of an abnormal foetus

Although there were a few more children with complications suggestive of an abnormal foetus in the clinic group, Table 7 shows that the difference between the two groups was not significant.

(7) Complications of pregnancy

Again there were slightly more complications in the clinic group but the difference was not significant (Table 8). The excess was in minor complications.

TABLE 7. FACTORS SUGGESTIVE OF AN ABNORMAL FOETUS

Rating*	0	1	2	Not known
Clinic	84	13	2	1
Control	90	10	—	—

$\tau = -0.0803$, N.S. Stuart's test for matched samples (combining the second and third columns): $z = 1.09$, N.S.

*See Appendix B.

TABLE 8. COMPLICATIONS OF PREGNANCY

Rating*	0	1	2 or more	Not known
Clinic	64	25	10	1
Control	74	13	13	—

$\tau = -0.0762$, N.S. Stuart's test for matched samples (combining the second and third columns): $z = 1.26$; N.S.

*See Appendix B.

(8) *Complications of delivery*

Once more there was no significant difference between the groups (Table 9).

TABLE 9. COMPLICATIONS OF DELIVERY

Rating*	0	1	2 or more	Not known
Clinic	76	16	7	1
Control	81	9	10	—

$\tau = -0.0386$, N.S. Stuart's test for matched samples (combining the second and third columns): $z = 0.67$, N.S.

*See Appendix B.

(9) *Postnatal condition of child*

Again there was no difference between the two groups (Table 10).

TABLE 10. POSTNATAL CONDITION OF CHILD

Condition of child*	1	2	3	Not known
Clinic	86	10	3	1
Control	87	8	5	—

$\tau = -0.0019$, N.S.

Stuart's test for matched samples (combining the second and third columns): $z = 0$.

*See Appendix B.

(10) *Congenital abnormalities*

Two clinic and two control children had minor congenital defects: overriding toes and a slight thumb deformity in the former group, very mild talipes and a small umbilical hernia in the latter. Four clinic children but no controls had severe congenital defects. Two had congenital heart disease (one coming to operation, the other attending a school for the physically handicapped); one had an imperforate anus and hypospadias necessitating numerous hospital admissions and operations; one had a bilateral hydrocoele again necessitating operation. If these abnormalities were related to the children's psychiatric disturbance, it is more likely that the stresses associated with their treatment were of etiological significance rather than

that the congenital defects were pointers to some more general constitutional impairment.

DISCUSSION

These results do not contradict the findings of others that prematurity and obstetric damage can predispose children to develop behaviour disorders in later life. Drillien in a comparative longitudinal study of premature and full-term babies (1964 a and b) has shown that severe prematurity (birth weight of 4½lb or less), severe complications of pregnancy and/or delivery, and severe familial stress, all make their contribution to behaviour disorders in later life even when social class factors are held constant. She showed also that the most common behaviour problems that are related to very severe prematurity (birth weight of 3lb or less) are overactivity and restlessness. However, the numbers of such grossly premature babies who survive must be very small indeed.

It is not surprising that, when special risk groups of children are examined, relationships between specific hazards and subsequent behaviour disturbances are found which disappear when they are looked for in a more general childhood population. This merely means that the hazardous events are rare and cannot account for the majority of behaviour disorders found in children. When large populations are examined, as in the Baltimore studies (Pasamanick *et al.* 1956, 1959), statistically significant relationships may be found between behaviour disorders and traumatic antecedent events, when in fact such events are causally operative in only a minority of disturbed children.

The work of Drillien (1964 b), Pasamanick *et al.* (1956) and Stott (1965) suggests that perinatal factors can be causally related with any confidence to only certain types of behaviour disorders in children, i.e. overactivity, restlessness and distractibility. It would not be surprising however if other behaviour problems of a reactive nature, for example delinquency, followed on the social and educational failures that restless and distractible children inevitably experience.

Fraser *et al.* in Aberdeen (1959) compared the later development of a group of asphyxiated infants and of matched normal controls. In the asphyxiated group there were a few children with gross neurological defects which may in fact have contributed to the asphyxiated state rather than been caused by it. Many more asphyxiated children than controls had minor impairments of motor ability, perception, and perhaps impulse control (nine asphyxiated children had been knocked down in the street compared with two controls). There were, however, no other convincing differences between the groups in behaviour as rated by mothers and teachers, and in intelligence.

In a recent study Ucko (1965) suggests that asphyxia at birth may result in quite specific temperamental characteristics in later life: unusual sensitivity, over-reactivity to stimuli, and a tendency to become upset when customary routines are broken. The somewhat surprising feature in this study is that as many as thirty out of eighty-one boys and fifteen out of seventy-two girls, said to be reasonably representative of central London children, were described as having been "asphyxiated" at birth. Few details are given about these children's birth histories.

In the present study it has been shown that prematurity and obstetric complica-

tions do not contribute significantly to the etiology of behaviour disorders in a population of psychiatrically referred primary school children from whom those few diagnosed as having constitutional disorders, had been excluded. This group of hospital attenders had on the whole been identified as in need of treatment by their parents, and not by school teachers or other outside agencies, and the ratio of boys to girls was slightly smaller than is usual for child guidance populations of this age group. The possibility exists that children identified as disturbed at school, who in Edinburgh attend an Educational Child Guidance Clinic, might include a greater excess of boys, and perhaps a greater number who had been exposed to obstetric hazards. A comparison of the two clinic populations would be of great interest.

The present findings are similar to Brandon's in the Newcastle 1000-family study (1960). He compared a group of children identified as maladjusted by Health Visitors with a group of controls, and found no difference in their obstetric histories.

The clinic group studied in the present investigation differed from the control group in that rather more children, especially more second and later born children, had been delivered in a hospital or other institution. Later born siblings of clinic children were also more often born in hospital and clinic mothers made generally more demands for hospital services for themselves and their children than did control mothers. How much this is the result of a true excess of morbidity in behaviourally disturbed children and their mothers, and how much it reflects the greater need for help and support of mothers of clinic attenders remains to be established. Despite the greater call upon medical services made by clinic mothers, the perinatal experiences of their children were no more hazardous than those of the controls.

SUMMARY

- (1) The obstetric histories of 100 primary school children referred to a psychiatric department with reactive psychiatric disorders were compared with those of 100 matched controls.
- (2) No significant differences were found between the two groups in maternal age, birth weight, factors suggestive of an abnormal foetus, complications of pregnancy complications of delivery and the postnatal condition of the child.
- (3) Rather more clinic than control children were born in hospital and the same was true of their later born siblings.
- (4) The implications of these results are discussed. The findings do not conflict with the established predisposition to certain types of behaviour disorders of very premature infants and of babies damaged at birth. The present study indicates however that children who have sustained such damage constitute only a minority of the children with behaviour problems who come forward for psychiatric care.

Acknowledgements—This study is part of a larger investigation sponsored by the Mental Health Research Fund. I would like to thank the record officers of the four Edinburgh obstetric units and of other hospitals and nursing homes for giving me ready access to their case notes. I am most grateful to Dr. C. M. Drillien for helping me to devise the obstetric part of the interview schedule for use with mothers and the rating scheme for obstetric complications.

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APPENDIX A

Enquiry into birth history

- | | | | |
|---|---------|-------------|---------------|
| (1) Did you have a normal pregnancy? | YES | NO | Specify |
| Were you admitted to hospital during the pregnancy? | YES | NO | Specify |
| Were you advised to go to bed at home during the pregnancy? | YES | NO | Specify |
| (2) Did you have a normal labour? | YES | NO | Specify |
| Were instruments used? | YES | NO | Specify |
| (3) Was he a healthy baby? | YES | NO | Specify |
| (4) What was his birth weight? | | | |
| (5) How soon after birth did you see the baby? | | | |
| within 48 hrs? | YES | NO | |
| (6) Where was he born? | At home | In hospital | |
| Name and address of hospital | | | |
| What was your name and address at the time? | | | |
| | | | |
| (7) Maternity notes to be checked on | YES | NO | |

APPENDIX B

Rating scales for obstetric hazards(1) *Factors suggestive of an abnormal foetus*

Each of the following rated one point. Hospital admission for hyperemesis; vaginal bleeding before the 28th week; hydramnios; birth weight below 5th percentile for gestation period (i.e. 1.50–1.75 kg at = > 35 weeks, > 1.75–2.00 kg at = > 37 weeks, > 2.00–2.25 kg at = > 38 weeks, > 2.25–2.50 kg at = > 39 weeks).

(2) *Complications of pregnancy*

Each of the following rated one point. B.W. > 2.00–2.50 kg; mild immaturity (36 < 38 weeks); mild postmaturity (42 < 44 weeks); Hb % ever < 60; hospital admission for pyelitis; cardiac disease necessitating restriction of activity; moderate essential hypertension or toxæmia (diastolic B.P. 100+ with or without albuminuria); ante-postum hæmorrhage (at 28 weeks +) of any kind.

Each of the following rated two points. B.W. 2.00 kgs. or less; severe immaturity (< 36 weeks); severe postmaturity (44 weeks +); severe essential hypertension or toxæmia (diastolic B.P. 110+ with or without albuminuria).

The following rated three points. Eclampsia (diastolic B.P. 90+ and fits with no past history of epilepsy).

(3) *Complications of delivery*

Each of the following rated one point. Total duration of 1st and 2nd stages of labour for primips. < 3 hr or 48hr +, for multips. < 1½ hr or 36hr +; spont. breech delivery; assisted breech with or without forceps to aftercoming head*; midcavity or high forceps for any reason other than those specified above and below*; intrapartum hæmorrhage; shoulder, face or brow presentation; caesarian section.

Each of the following rated two points. Vertex with manual rotation and forceps delivery; internal version and breech extraction; low forceps for foetal distress; prolapsed cord.

(4) *Postnatal condition of child*

The following rated zero. Good, no special resuscitation measures needed.

The following rated one point. Causing mild anxiety, but child responded well to measures of resuscitation and was well within 12hr of birth.

The following rated two points. Causing severe anxiety; child responded less quickly to measures of resuscitation or caused anxiety after 12hr.

*Breech extraction scores 1 point for breech delivery and another for forceps delivery = 2 points.

BOOK REVIEWS

The Adolescent Experience. ELIZABETH DOUVAN and JOSEPH ADELSON. John Wiley, London, 1966, pp. 428+xii. 60s.

IN RECENT YEARS there have been many useful and striking contributions from writers on both sides of the Atlantic to our understanding of the nature and meaning of adolescence in contemporary society. Usually the authors have attempted either a general appraisal of the topic or confined themselves to a discussion of a specific piece of empirical research. Messrs. Douvan and Adelson have very boldly attempted both genres simultaneously, and the success with which they have carried this off makes their book a *tour de force*. There is, as they point out, a curious confusion in the way various commentators talk about adolescents. Sometimes we are asked to regard them as whipping boys, and sometimes as sacrificial heroes and visionaries of a happier and healthier future social order. This inconsistency serves but to cloud the public argument that the theme inspires and derives, one supposes, mainly from the fact that a great many studies have been concentrated on exceptional young people—deviants and misfits, neurotics, bohemians and rebels. But the great majority of youngsters fall outside these categories, and they are the ones with whom this research is most concerned.

The book is based on two national interview studies carried out by the Survey Research Centre in the years 1955 and 1956, the first, on adolescent boys, conducted for the Boy Scouts, and the second, on adolescent girls, for the American Girl Scouts. The sample represented a cross-section of school children between the ages of fourteen and sixteen, and consisted of some 3500, all of whom were individually interviewed by the research workers. The questions which are printed in full at the back of the report ranged over a great many topics of focal concern to youth and were both general and specific in nature, open-ended and projective. The sample very probably under-represented the delinquent and deviant youngsters, but in all other respects seems to have been adequate; the only reservation that could be made arising from the fact that the interviews were conducted in school, and hence may have failed to elicit answers which the respondents might have considered potentially detrimental to their standing *vis-à-vis* their teachers.

The core analytical concept used by the authors was that of the boy's or girl's self-image, thus relying heavily on projective and indirect data for validation. Although in the earlier part of the book frequent recourse is made to psychoanalytical hypotheses, more general psychological and, later, even sociological theories and ideas are tellingly employed.

It is impossible in the space of a brief review to do justice to a work of nearly 500 pages and covering so great an area of human variation. We can, however, touch on some of the main findings and integrating themes of the report. (1) The key orientation for the adolescent is the future. Hence and integrating themes of the report. (1) The key orientation for the adolescent is the future. Hence adolescence is not a self-validating phase at all, and attempts to treat it as such merely serve to prolong irritating immaturities. Satisfactory adaptation demands concern for future roles and destinies. (2) The boys' vocational goals are seldom coloured by dreams of future glory. They think more of a good job than of outstanding success, while the girls tend to focus on marriage and family life. The boy says, "This is what I want to be". The girl says, "This is what I hope my life will be like". (3) There is, then, a considerable difference between masculine and feminine roles and an acceptance of this fact is crucial for satisfactory maturation. The authors claim that this is the most outstanding outcome of their enquiry. (4) The nature of the masculine role necessitates the boys achieving much greater independence than the girls need in order to achieve their goals. The latter, hence, seldom have to rebel against parental rules, while the former sometimes may feel it incumbent on them to challenge the adult world simply in order to be able to operate successfully as males and not in response to any psychological frustration or maldevelopment as such. (5) This fact leads to a differential use of the peer group by boys and by girls. Girls are less gang-minded by role-definition and tend to involve themselves most heavily in the interpersonal sphere. (6) Two clear family patterns seem to be visible; one democratic and the other autocratic. These produce different kinds of young people, and there is

no doubt whatsoever that the boy needs a democratic home atmosphere if he is ever to achieve the degree of autonomy that his future role demands. (7) There is an apparent homogenization of all American society in terms of middle-class values which are currently influencing all young people. (8) Boys and girls have to achieve various developmental tasks, and these differ for boys in specific ways. While both have to dissolve infantile dependencies and integrate new areas of autonomy, the girl's self-image is phrased much more than the boy's in interpersonal terms. Thus, the emphasis that some psychoanalytical theorists have placed on a purely masculine identity model fails to do justice to the empirical facts for adolescents as a whole. (9) There are, therefore, two adolescent crises, not one: the masculine and the feminine, and these have to be carefully demarcated in any descriptive analysis of the period.

Finally, the authors are led to some 'rather dismal conclusions' about contemporary American adolescents. They may achieve some degree of autonomy, but do they ever achieve emotional maturity? They do not appear to be very deeply involved in political discussion and seem to lack any coherent set of life-values. Content with a modest resynthesis of their egos, confined in the playpen of the peer group culture, far too many, in the last analysis, seem to forget their adolescence, and instead become mere teenagers. If this is true, and I think the evidence for such a view is fairly strong, then it is clearly the fault of our social leaders and educators that youth today is offered so poor and stultifying a cultural diet. This book does not deal with remedies and prescriptions, but a thorough examination of its diagnosis will surely prove helpful. In any case, it cannot fail to be widely read and hotly discussed for a great many years ahead.

JOHN MAYS

Contrary Imaginations: A Psychological Study of the Young Student. LIAM HUDSON. Schocken Books, New York. 1966, pp. 181, \$4.95.

DR. HUDSON writes entertainingly on a topic of considerable psychological and social importance. No doubt many psychologists, educationists and school teachers will enjoy reading this book and will profit from having their minds directed to some new and important issues.

A major difficulty, however, is the superficiality of the statistical techniques employed. In studying the interrelationships between factors such as intelligence and creativity, for purposes of discriminating between different types of academic interest, it is absolutely essential to employ multivariate methods of correlational analysis and analysis of variance, if one is to gain anything more than an intuitive glimpse of the situation. Inferential statistics are a form of logic. In the absence of what the writer calls "complex statistics" we have to remain largely ignorant about the problem to which the book is devoted. As Sir Cyril Burt has pointed out after a scientific investigation of the problem, creativity is an important factor in scholastic achievement, but it nevertheless appears to be subsidiary to intelligence. The elementary methods employed by the author can cast no further light on this basic question. And it is of little real value, although interesting, to "take Bailey for example". Psychology has passed beyond reliance on the pertinent anecdote.

Despite this weakness, much of the book is devoted to homilies about the methodological and theoretical limitations of psychology. Dr. Hudson thinks, for example, that to investigate the methodology of job satisfaction ratings among physical training instructors is trivial. One would have thought that the happiness at work of physical training instructors (and of everybody else) was of the utmost importance, and certainly deserves a methodical rather than a haphazard approach. This book shows too much of a tendency, even for a European, to be critical. It serves no good purpose to harp on the weaknesses of poor work and to ignore the strength of good work. Every able undergraduate is aware of these limitations.

Yet at the descriptive level this book is a tour de force, and makes highly enjoyable and informative reading. It describes the nature of convergent and divergent thinking very clearly, and gives many delightful examples to illustrate their importance in academic choice and success. It will also give psychologists some fresh starting points for making a more thorough investigation of a very worthwhile problem, and no lecturer on the subject should ignore it. Despite its scientific recidivism, I warmly recommend this book.

F. W. WARBURTON

The Psychiatric Disorders of Childhood. C. R. SHAW. Appleton-Century-Crofts, New York, 1966, pp. 442, \$11.50.

This is a new textbook covering the greater part of the field of child psychiatry, though not psychiatric disorders secondary to specific diseases of the central nervous system. It is in five sections which deal, respectively, with "behavioural individuality" and the causes of mental illness; symptoms and the diagnostic process; "specific disorders"; treatment; and, in a section headed "Perspective", the history and possible future of child psychiatry.

The opening section is a brave attempt to link relevant knowledge in more basic sciences to child psychiatric disorders; nevertheless it is not very successful, largely because of the unsatisfactory state of knowledge in this field. The author is obviously on firmer and more familiar ground in the succeeding sections dealing with clinical topics. These are largely an account of the author's practice and experience in the Hawthorn Centre, Northville, Michigan. While selective reference is in places made to the work of others, some sections—such as that on residential treatment—are predominantly personal accounts.

The section on "specific disorders" has chapters on childhood schizophrenia, psychoneurosis, brain-damage, specific learning disabilities, personality disorder, psychopathy, mental retardation, juvenile delinquency, physical illness and "other clinical syndromes". Most chapters open with one or two fairly full illustrative histories. Clinical descriptions follow. This makes for quite easy reading but may perhaps tend to leave the reader with a rather rigid stereotype of each condition.

The classification of child psychiatric disorders used will be unfamiliar to some readers. *Schizophrenia* is used as a term covering a variety of psychotic clinical pictures and, despite reference to Goldfarb's classification of childhood schizophrenia into "organic" and "non-organic" cases, the author attempts to make a sharp distinction between schizophrenia and disorders due to brain-damage. The term *personality disorder* is used for what many British psychiatrists label *behaviour disorder* or *conduct disorder*. This condition is presented as disordered, predominantly anti-social, behaviour in "Wednesday's children, children of misfortune, unwanted, unloved, brutalized, neglected". Perhaps because he thus confines the use of the term to fairly severe conduct disorders the author has found them less common than psychoneuroses, which he says are the commonest child psychiatric disorders. The milder, but very common, conduct disorders are apparently considered to be aspects of normal behaviour but are not discussed in detail. The author's concept of *psychopathy*, characterized by "diminished or absent capacity for relationship", by early emotional deprivation and by a very gloomy prognosis, may also be questioned. Such prognosis may be justified in the adult or adolescent, but the evidence that many younger children recover, at least partially, from early emotional deprivation is not fully considered. It is surprising, moreover, that in the section on juvenile delinquency there is little discussion of the possible aetiological role of early deprivation.

The *treatment* section includes descriptions of psychotherapy, which the author considers should be mainly non-interpretative, and an interesting account of residential treatment. There is also a chapter, written by Dr. Alexander Lucas, on psychopharmacology in which the various groups of drugs available for use with children are reviewed. Unfortunately age- or weight-related doses are not given; this will limit the usefulness of this section as a source of reference in the treatment of younger children.

The final section consists of a short history of child psychiatry followed by some thoughts on its future. Some challenging statements are made. For example, the author considers the care of mentally ill children in the U.S.A. to be "for the most part a disgrace"; he also suggests that psychoanalysis may have contributed most of what it is going to contribute to psychiatry and will henceforth be "a diminishing force".

This book is an interesting, stimulating and very personal account of child psychiatry. It is not a definitive work on the subject, but those specializing in child psychiatry and related fields will find in it much clinical wisdom and material for thought. Unfortunately it shows signs of hurried preparation, much clinical wisdom and material for thought. Unfortunately it shows signs of hurried preparation, much clinical wisdom and material for thought. A glaring example is the marked misprints and grammatical and other errors being much too common. A glaring example is the marked discrepancy between Figure 1 and the text describing it on page 8. Despite these drawbacks the author's kindly philosophy and his feeling for his patients come over very clearly, and he succeeds in at least one of the aims stated in the preface—that of writing a compassionate book.

PHILIP BARKER

Studies of Troublesome Children. D. H. STOTT. Tavistock Publications, London, 1966, pp. x + 208. 32s. net.

PROFESSOR STOTT's writings on delinquency are always provocative and this book is no exception. It summarizes his theoretical formulations and the results of his various investigations into the hypothesis that damage or dysfunction of the brain developing at or before birth leads to a temperamental impairment which forms the basis of much, if not most, delinquency.

Stott criticizes the concept of subcultural delinquency and points to his finding that delinquents from high delinquency areas are just as maladjusted, have the same physical disabilities, and come from similar families, as delinquents from low delinquency areas. He puts forward what he calls a 'law of multiple congenital impairment'—in essence the idea that if a child has one sort of handicap he is likely to have another. Thus, he found that delinquency is associated with a history of undue ill-health and hospitalization in infancy, a high rate of physical illness in later childhood and physical defects such as squint or impairment of speech. Largely on the basis of Drillien's finding that prematurely born children have an increased rate of maladjustment at age 7-years, he argues that both the delinquency and the physical disorders have their basis in neural dysfunction associated with perinatal damage. In this connection he also notes that the preponderance of male delinquents is similar to the excess of boys among children with a wide range of biologic handicaps such as mental subnormality or educational backwardness. He suggests that the continuum of reproductive wastage constitutes a mechanism of fertility regulation. In the final chapter of the book Stott relates his views on delinquency to his more general concepts of human motivation.

The book contains no new material but it is very useful to have hitherto scattered reports brought together in one volume. Unfortunately it gives the impression of being put together with undue haste so that the central argument is sometimes rather disjointed. For example, the first half of the book is virtually a reprinting of his monograph 'Thirty-Three Troublesome Children'. This is among the least weighty of Stott's studies and a briefer summary, more appropriately placed in relation to the main presentation of his work and his theoretical views, would have been more suitable. As it is, his ideas on the treatment of delinquency come in the middle of the book, well before the chapters giving his concepts of aetiology. References to work other than his own are occasionally curiously selective. For example, Stott discusses the 'continuum of reproductive casualty' without reference to Pasamanick and Knobloch in either the text or bibliography (there is a very brief footnote).

Stott's hypothesis that delinquency develops on the basis of neural dysfunction cannot be considered proven, but the evidence he presents in support, although often circumstantial, is certainly challenging. His views demand serious consideration and this book will be of interest to anyone concerned with delinquent or maladjusted children.

MICHAEL RUTTER

Psychiatry, Education and the Young Adult. DANA L. FARNSWORTH. Charles C. Thomas, Springfield, Illinois, 1966, pp. xv + 269. \$9.50.

THIS is an important book. Readers of Professor Farnsworth's earlier contributions will already know him as a stimulating writer with a broad view of things, and as a skilful clarifier of issues which are too often presented in a manner that is either biased or confused. In putting together his ideas in a single volume he has performed a major service for all concerned about students and the problems of their intellectual and emotional maturation in a complex and changing society.

Professor Farnsworth's basic approach is developmental; that is, he takes for his model the theory of personality development of Erikson, itself derived from psychoanalysis. This 'dynamic' approach, seeing the student with developmental tasks, and relating his efforts at mastery to his earlier development and his family relationships, makes a great deal of sense both clinically and educationally, and is particularly relevant to the question of short-term psychotherapy.

The scope of the book is unashamedly broad and extends psychiatry from the consulting room right into the college community at all levels, unquestionably the correct approach given a suitable 'climate'. Since there have been some favourable signs in Britain recently, the book comes at an opportune moment for workers in this country who hope for more change in this direction.

In a book of such broad scope it is perhaps inevitable that some parts are superficial. In the chapter on drugs the 'basic facts' are a good deal more uncertain and complex than Professor Farnsworth's account suggests. Sexual behaviour is discussed under the heading 'Sexual Morality—The Dilemma of the Colleges', but the many possible meanings of different kinds of sexual behaviour are hardly touched on. It was also disappointing to find no discussion about the relationships between medical care and psychological care: the 'whole person' approach which many people in Britain feel to be so important, but which is in some ways progressively more difficult to sustain.

However, the shortcomings of this book are small in comparison to its merits and it can be warmly recommended. Indeed it should be top priority reading for all concerned with students from whatever viewpoint.

C. J. LUCAS

Residential Work with Children. RICHARD BALBERNIE. Pergamon Press, Oxford, 1966, pp. 244. 45s.

THIS is a challenging book. Professor Morris, in his foreword, describes it as "new and exciting". It is a preliminary report on "the process of interaction between child, staff, family and community (and the development of morale in staff and children) during the treatment period in several residential establishments dealing with delinquent, maladjusted, and deprived children". It describes the results of being in residence together, not only from the side of the boys, but also from that of the staff.

The author, an educational psychologist, was the principal of a residential school for maladjusted boys. The original ideas, largely permissive, on which the school was founded, did not produce in practice the expected results, and the staff became "confused". Were they attempting too much and possibly in the wrong setting? In order to find out more about the problems involved, the author decided to carry out several pieces of research, two of which are reported in this book.

The first study was of thirty-two boys who had been to special schools and who were followed up at ages between 17½ and 22. Only five had been able to settle down again successfully in their own homes. Eight others had achieved some degree of adjustment away from their homes. The boys who had improved had all formed a clear relationship with an adult at the school, often a cook or gardener, but usually someone outside the residential staff.

The second study arose from the need to differentiate more clearly the problems of the maladjusted children sent to a residential school. For this, sixty cases were selected. Thirty had been sent to a residential school, thirty remained at home, but attended a day special school. From the detailed early history various contributing factors were elicited and, eventually, three main syndromes were identified. In the first, the problem was mainly an educational one, and the boy's home, in particular his mother, continued to provide adequate support. In the second, the mothers are described as being very neurotic but ambivalent; no adequate paternal figure was available, and these children remained disturbed at the end of treatment, the home usually deteriorating, and no new reference group for the boy being established. The third syndrome is where the boy's mother was cold and rejecting in addition to being very neurotic: evidence of rejection during the first two years of life was available; the boy had usually been tried unsuccessfully in substitute homes. Both the boy and his home tended to improve while he was away. In these cases there was no correlation between the state of the boy when he left the school and when he was reassessed. On leaving school, they have often achieved considerable educational progress and seem better adjusted, but there is no evidence that they have improved in their ability to form personal relationships.

This section of the research highlights three separate basic needs, effective psychotherapy, therapeutic communities with alternative or supplementary environment for the boy's natural home, and family-oriented case-work.

The author points out how present arrangements often perpetuate the problems by not treating the issues realistically. The staff of child guidance clinics and other social agencies, may, in fact, let the community down by fragmenting a situation, thereby giving the impression that the problem is solved, while, in fact, it has only been distributed. Selection committees of residential schools are taken to task for accepting boys for whom they do not have adequate treatment facilities and resources, especially when they know the home is ineffective but are yet unable to provide appropriate alternatives.

• The book includes a historical survey of research and work with difficult and deprived children. The last chapter is entitled "Task, enterprise, processes, role clarification, inspired leadership and professional disciplines". Too many agencies are out of touch with reality, they are doubtful about the contribution that they are making and, as a result, their own morale and the integrity of their workers is affected. He has a special word for those who use committees as scapegoats.

This is not a comforting book. Too frequently children are sent away because we have come to the end of our resources and they are still disturbing the community. We have peace when they are off our list and too little thought is given to what will happen when they return. One can recall cases where the child seems to be beyond the competence of his parents and a Fit Person Order is made, but the boy or girl fails to settle and the problem is confounded by regularly running away back home.

Balbernie's list of what he would hope to find in any residential educational establishment is long and difficult to provide. At present (or is it the present salaries?) there seems to be a very marked shortage of people who wish to live together and provide for others a community background, and who also have the understanding and experience which enables them to know when to make a situation structured or when to allow it to be permissive.

This is the kind of book to be referred to not only once, but every three years, to see how far the services provided locally measure up to this blue-print. This book could well be on the list of required reading for children's officers, senior child care workers, heads of clinics and residential schools, in fact, all who are concerned with the placement of children away from their own homes. Its major drawback is the price but possibly the Pergamon Press might consider a paper-backed edition.

R. F. BARBOUR

Asthma: Attitude and Milieu. AARON LASK. Tavistock Publications, London, 1966, pp. 236. 35s. This is the latest addition to the series of Mind and Medicine Monographs edited by Michael Balint from the Tavistock Clinic. It is based upon the work undertaken by his research seminar for experienced family doctors. Their original aim was to study three contrasting groups of patients, suffering respectively from asthma, peptic ulcer and ulcerative colitis, but premature foreclosure of the research scheme narrowed the project to the asthmatic group alone. This book is the outcome.

It has been compiled by Dr. Lask, a member of the research seminar, from the case histories of one hundred asthmatic patients, both adults and children, actively under treatment from one of the eight general practitioners in the project, within their respective practices. The book is complementary to more formal studies based perhaps upon ventilatory function, or purely pharmacological considerations, or with an epidemiological orientation, in that it presents the approach of enlightened family doctors in the front line of therapeutic engagement with the problem; men "interested in their patients as people, not as the carriers of a disease", who set out "to discover what sort of people their asthmatics were . . ., what they did with their asthma, what it meant to them (*and to their families*), and how it affected their lives".

There is evidence of much original thought allied to mature judgement in the author's evaluation of the clinical material according to the patient's "leading attitude". This ranged from demanding over-dependence, through aloof self-sufficiency to actively hostile independence, and Dr. Lask argues convincingly that by adopting this classification and so enhancing their appreciation of the complex dynamics involved, he and his colleagues came to "manage their asthmatics much more satisfactorily". For those of us engaged in the clinical field of psychosomatic disorder the distilled experience of this percipient team is equally worthy of consideration.

Finally, through its style of presentation, this book supports the view that despite increasing competition from sophisticated psychodiagnostic techniques, there is as yet no substitute for the individual case history, and Dr. Lask is to be congratulated for thus upholding the Hippocratic tradition.

PHILIP PINKERTON

A New Approach to Nocturnal Enuresis. C. R. A. MARTIN. H. K. Lewis, London, 1966, pp. 145. 22s. 6d.

THIS is a comprehensive survey of present views about the aetiology and treatment of enuresis. The author contributes his own survey of over 4000 children attending thirty-two schools of all grades in the southern part of the city of Birmingham. The percentage of enuretics in the age range 5-6-years was 9.6, between 10-11-years 4.5, between 14-15-years 1.15. The National Child Development Studies report 10.9 per cent at the age of 5.

There are chapters on Bladder Function and Micturition, Causes of Nocturnal Enuresis, and on Treatment. The author pays special attention to those cases where there are no obvious contributory organic or psychological factors, and where the main findings are hypersomnia and polyuria, and he suggests that "the phasic inversion of anti-diuretic hormone (A.D.H.) secretions during sleep is the most likely cause of nocturnal polyuria, which, in turn, is the cause of many cases of nocturnal enuresis". Hypersomnia is often regarded as an important contributory factor, but, at a time when a group of us (Barbour *et al.* 1963) were investigating enuresis, one of us (E.M.B.) decided to check on this point and, so far as hospital cases were concerned, hypersomnia was as frequent in the non-enuretic as in the enuretic. It is unusual for parents or doctors to make a systematic attempt to wake children or patients 2 hr after they have gone to sleep and therefore assessment of this factor is rare.

The first of two chapters on treatment covers most of the routine measures, the second gives details of some special investigations and treatments carried out to support the author's A.D.H. hypothesis. Nine of the worst cases in the age range 6-10 were admitted to hospital and were given vasopressin intramuscularly over a period of seven days. No case was dry, but all showed marked improvement sufficient to make the author try the effect of giving fourteen cases, on an out-patient basis, sublingual pellets of vasopressin. No side effects were reported and the results are said to have been "a little better than would be obtained by any drug therapy but certainly below the small trial of in-patient treatment". The effect of a lysine-vasopressin spray is also reported. Ten cases were greatly improved, ten improved, two failed to respond.

This book, by its title, may encourage a degree of expectancy which is possibly barely justified, as pituitrin snuff has been in use for over ten years. The author is well aware of the suggestive factors associated with any new form of treatment and the part played by enthusiasm, and ends by drawing attention to "the need of further work". The book, however, does provide a comprehensive picture of the many approaches to this very bothering symptom. It also makes clear that cases vary and that dealing with them is at present an art rather than a science.

School medical officers, general practitioners, paediatricians, genito-urinary surgeons, who are looking for an up-to-date appreciation of our present state of knowledge regarding enuresis, will find it in this book.

R. F. BARBOUR

REFERENCE

BARBOUR, R. F., BORLAND, E. M., BOYD, MARY M., MILLER, ASHTON and OPPE, T. (1963) Enuresis as a disorder of development, *Brit. Med. J.* 2, 787.

Roleplaying in Psychotherapy. (A manual) R. J. CORSINI and S. CARDONE. Chicago Aldine Book Publishing Co., 1966, pp. 206, Price \$6.75.

THIS is a clearly written and commendably brief book on what is more often called *psychodrama*. It is packed with interesting examples of cases, some of which are children and adolescents. There is an annotated bibliography.

Those who practise the more serene methods of individual or group psychotherapy may be diffident about experimenting with ones which call for more active interference, such as hypnosis, chemical abreaction, or roleplaying. Corsini, however, considers that those who practise his art are more "creative, venturesome and ascendant" than the general run of psychotherapists. He writes "a more really significant session can be exhausting and, if it goes as the therapist wishes it to, he will have an exhilaration far beyond that which can occur in any of the quieter and more passive forms of psychotherapy", and, "it is hard not to write dramatically about a method which does tend to produce dramatic events and dramatic consequences".

Corsini, in his general practice in individual or group psychotherapy, has his patients roleplay for only about ten per cent of the treatment time. Roleplaying seems to be a powerful ancillary, provided it is used to help the patient, even more than to entertain the therapist.

Thirteen per cent of the references are from the Moreno family, which is just as they invented *psychodrama*.

RICHARD MEYER

Porteus Maze Test: Fifty Years Application. S. D. PORTEUS. Pacific Books, Palo Alto, Calif. Harrap, London. 1966, pp. 320. 55s.

TOWARDS the end of a long and active career Professor Porteus has produced, not so much a survey of all that is known of his Mazes test, as a personal history of its evolution, a discussion of its role in clinical, ethnological and other areas, and a number of *obiter dicta* about testing, mental deficiency, intelligence, brain injury, delinquency and ethnic differences. At the same time it does cover many of the major studies from the birth of the test in 1913, including some unpublished ones, and thus brings out the extraordinarily wide range of applicability of such a short and simple instrument. His main thesis appears to be that general intelligence tests such as Stanford-Binet and Wechsler have been accorded an exaggerated importance. No one can really define what they measure; the Binet obviously favours verbal development and the Wechsler performance tests are quite unvalidated. The Mazes at least measure something homogeneous throughout, and a great many lines of well-replicated evidence indicate that this something involves foresight, sustained alertness, the ability to look ahead, plan and control one's responses. Likewise the qualitative scoring has been shown in many contexts to be connected with such personality characteristics as impulsiveness and inability to conform to instructions. Hence the Mazes score helps to differentiate lack of practical adaptability in defectives and the loss in critical foresight following lobotomy, where the Binet and other tests have failed. It has even shown (once allowance is made for ordinary practice gains) that brain insult tends to have more serious long-term than immediate effects. It is sensitive to Vitamin-B deficiency and to the effects on 'vigilance' of tranquillizing drugs like chlorpromazine, and stimulators like the amphetamines. The scores of clear cases of exogenous mental defect are much lower than those of endogenous cases of the same Binet level.

Porteus's wide-ranging anthropological studies (which are fascinating to read about) have been widely criticized. No test has been given to so many and varied illiterate groups, nor been as acceptable to primitive peoples. Now in fact he nowhere claims that he is measuring innate adaptability, although he does demonstrate that easy explanations of ethnic differences in terms of amount of schooling or favourableness of physical environment are inadequate; and he does not deny that some genetic differences may exist. The mean scores range from about $7\frac{1}{2}$ years among Kalahari bushmen, through $10\frac{1}{2}$ years among Australid aboriginals, to normality and above among (largely acculturated) N. American Indians. Though his eventual conclusion is not entirely clear, it would seem that he believes the test to indicate the level of critical planning induced by the habitat, and by the social organization of the culture.

Like most good clinicians Porteus is open to some criticism for paying insufficient attention to the statistical characteristics of his instrument. For example he often uses Porteus test quotients without giving any data on their scatter at different age levels. Again the repeat reliability of such a short series of test 'items' must be rather low. However he has now provided two additional parallel series—the Extension and the Supplement, which are particularly useful for retesting studies; (it is a pity that they are not readily available in this country). The book contains the materials for all three versions and full details of administration and scoring.

P. E. VERNON

Bilingualism and Primary Education: a Study of Irish Experience. J. MACNAMARA. Edinburgh University Press, Edinburgh, 1966, pp. x + 173. 35s.

THE STUDY of bilingualism ought to provide us with a valuable approach to fuller understanding of the interaction of language and general mental development. For the psychologist, a bilingual region is a naturally arranged experimental situation for the study of language. Yet remarkably little has been established definitely on what happens when one has to learn two languages simultaneously. In

many areas of the world, with the spread of English as an international language, bilingualism is increasing rather than decreasing. Indeed, for Africa and Asia, an understanding of what bilingual education involves is of greater importance just now than the exploration of the surface of the moon.

Part One of Macnamara's book provides an explanation of why so little progress has been made in research in this field of study. In thirty-four pages, he gives a detailed review and analysis of seventy-seven previous studies on bilingualism in many regions of the world, from the Hebrides to Hawaii. Many of these studies are criticized for inadequacy of experimental design, unrepresentative sampling, or faulty testing procedures and translations. Together, they illustrate the wide range of different situations which may be classed under the heading of "bilingual": a primitive language being superseded by English; a rich minority culture being submerged; an immigrant community being absorbed; a border zone between two language regions; and so on. Macnamara's review must be compulsory reading for anyone who plans to do research on this topic.

His own study, described in Part Two, is a model of careful design and sophisticated statistical analysis. It is not light reading: "The method which Snedecor outlines for 'deleting an independent variable' when the inverse matrix has been calculated was followed . . ."; "The condition of homogeneous regression is not satisfied . . .". One of the main purposes of his survey was to compare children from English-speaking homes who had been taught in Irish for varying periods, with similar children who had been taught in English. Essentially it is a review of the entire national programme for reviving Irish. In a country where over 96 per cent are English speakers, Irish national schools devote 42 per cent of the available time over the first six years to Irish, and only 22 per cent to English. After forty years of this policy, the results, he concludes, are "not very encouraging". "Native-speakers of English appear to be relatively weak in both English and Irish"; "The teaching of mathematics, . . . through the medium of the second language does not benefit the second language, while it has a detrimental effect on children's progress in mathematics."

In the foreword, Professor Lambert of McGill calls it "a sad story. . . . The Irish attempt to develop a nation that is bicultural and bilingual has not . . . succeeded." But this book is of interest far beyond the confines of Ireland. The author's conclusion in favour of a 'balance-effect' in bilingualism—that improved skill in one language must be paid for by deficit in the other—may or may not be specific to the Irish situation. The conditions in Ireland are different from those in other bilingual regions, but they may well be replicated before long in Africa and Asia. Meanwhile the findings of this survey are important for any student of language development—in particular the staggering handicap of the native English-speaking Irish, whose mean score on a Moray House English test, by British norms, was 80.

JOHN NISBET

Motivated Learning. M. E. HEBRON. Methuen, London, 1966, pp. 264, 35s.

THE AUTHOR tells us that the book is for students of psychology and education. Its purpose is to show the applicability of the various theories of motivation and learning to the sensori-motor, pre-conceptual, and transitional-intuitive stages of development; also to middle childhood, adolescence, maturity and later years. After an opening chapter dealing with the physiology of motivation and learning, the author continues to use relevant material from both physiology and psychology throughout the book. For Hebron there is a very close connection between motivation and learning. Thus at the outset on page 16 we read that "differences which exist between individuals in capacity to learn may derive not from a better 'brain' but from some system which activates the brain prior to its mental operations", while on the following page it is pointed out that the learning of today affects the motivation of tomorrow.

A very great deal of relevant literature is surveyed and a good attempt has been made to weld it together into a meaningful whole. This was a tremendous task and the author is to be congratulated on her efforts. In many ways the book will be invaluable as a source of ideas.

On the other hand a warning must be given that the work must be read thoughtfully and critically. In tackling this task in the compass of 233 pages there is bound to be some oversimplification. While the reviewer is not competent to comment on much of the neurophysiology, he must point out that in the psychological areas what is stated as a fact should often be considered as a hypothesis or suggestion. While it would be uncharitable to cavil at length over this, a few examples must be given. On pages 107/108 we read: "This remark had healing value, for it was a communication between

patient and therapist which integrated the patient's sense of desolation and his ego-involved creativity into harmonious co-existence"; on page 154 it is stated that the formal operation of Piaget is a mode of thought within reach of 90 per cent of the population; in Chapter 7 there is a ready acceptance of the work of Getzel and Jackson in spite of the many studies that have thrown doubt on their work, and in spite of the fact that the work of Harris and Liba has thrown doubt on the value of Guilford's model of the intellect itself. There are also some unexpected omissions. Piaget's views on intellectual motivation are not really brought out, while the name of Erikson does not appear at all.

The dust-cover suggests that the book will be of value to students studying for the B.Ed. and higher degrees in education. The reviewer agrees. But students will need the constant guidance of their tutors to help them sift the wheat from the chaff.

K. LOVELL

The Psychology of Childhood and Adolescence. C. I. SANDSTRÖM. Methuen, London, 1966, pp. 259. 36s.

THE GOOD photographs in this book and the high quality of its appearance may motivate people to read it. I am afraid that they are likely to be disappointed by the contents.

Five years elapsed between the Swedish edition of the book in 1961, when its substance was already rather dated, and its appearance last year in English translation. In his editorial foreword Professor Mace states: "This book differs in some important ways from most of the texts in Methuen's Manuals of Modern Psychology", which are at intermediate level, it being suitable for the general reader as well as for the student. It certainly does not approach the other volumes in quality. Also, it seems unlikely to engage "... young parents who take an intelligent interest in the development of their children". Vitality and humour are lacking, there is little discussion of children's problems, and in some places appropriate prior knowledge is necessary for comprehension. For students, the book attempts to cover too much ground in too short a space, with the result that nothing is treated thoroughly, there is insufficient discussion, and although the author stresses objectivity he makes statements without supporting evidence. The student who is stimulated to pursue a line of interest will be frustrated because sufficient documentation is almost totally lacking.

Two chapters are devoted to the usual catalogue of descriptive norms, taken from Gesell, without any discussion of his underlying philosophy of growth. There are chapters on physical, emotional and social development; those entitled intellectual and personality development are about assessment, not development. Other topics are learning and perception, language and thought, with no mention of the contributions of the Russian investigators, and a sketchy account of motivation. The book ends with two chapters on puberty and the years around, and one on children at school, which was revised for the British edition.

Some time ago I was asked by the Librarian of the Bristol Institute of Education whether the book should be added to the library. I said, "No". A further reading for this review has strengthened this decision.

J. WILKS

Ability Structure and Subgroups in Mental Retardation. JOHNS CLAUSEN. Macmillan, London, 1966, pp. viii+215. 80s.

THE AUTHOR sets out with clear aims which he outlines, together with his expectations, in the introduction. His guiding hypothesis is that sub-groups of defectives can be identified empirically on the basis of different patterns of abilities or functions. His aims are twofold: first to examine the ability structure of the mentally retarded and to relate this to chronological and mental age, and second, to examine the association between any sub-groups which may thus be found and any neurological, electro-encephalographic or etiological differences. These aims are reasonable, even though clinicians are well aware that any simple correspondence between CNS lesions and dysfunction is contra-indicated by the presence of considerable function in imbeciles with gross porencephalies.

The major question is how to test the hypothesis, and those familiar with the field of factor analysis and mental ability structure could warn Dr. Clausen of the pitfalls of the method he chose. In the event he learns some of them himself in an honest evaluation of the data he accumulates. There are others which he could have apprised himself of by a better acquaintance with the literature.

The omission of Sir Cyril Burt's (1937) basic analysis is of course routine in American studies and no longer surprises this reviewer, but omissions of studies by both Windle (1962) and Kebbon (1965) which bear directly on the same questions as those in the volume under review seem unjustified. O'Connor (1952) and O'Connor and Tizard (1956) carried out fairly extensive studies of the factor structure of the subnormal which are not mentioned. These omissions are regrettable because Clausen learns during the course of his work that factors sometimes have remarkable resemblance to the tests which contribute to them, that intelligence can play a dominating part in the performance of the backward on tasks of many different kinds, and the sad lesson of many factor analysts, that many significant correlations may be due to chance. All this he could have learnt from the authors mentioned. There is another observation which he appears not to have made, which is that samples of even one hundred cases are not large enough. Using the type of tests he used and the numbers he used, it is possible to get completely different factor structures on test batteries administered twice to the same subjects with a gap of 12 months between tests.

Such fairly important questions of method, aside from the inattention to the literature, should not prevent the reader from realizing that Clausen is taking up important issues. He begins by adopting the view that defectives could be sub-divided by patterns of dysfunction, and concludes from his investigations that this is not so. He also concludes that neurological lesions do not explain his pattern of results, although the EEG may be a better guide, and that etiological considerations are of no help either. Clausen is thus free to conclude that defectives show a more or less uniform disablement and that the cause should be sought in a lack of general arousal rather than in terms of localized CNS dysfunctions. He speculates that the characteristic disorder of the subnormal is one of inattention, and that this may indicate a dysfunction of the arousal system.

There are some who will not disagree with this view, but the author himself gives reasons for thinking that the finding may not be too secure and I have tried to suggest that there are some other reasons which further justify his caution. Furthermore, although it would be unwise to assume that the most popular view is the wrong one, the reticular formation must already bear a heavy load and Clausen has added another straw to the burden. There are a number of individual test results which readers will find of interest and which there is no space to mention here.

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N. O'CONNOR

A Psychological Study of Cerebral Palsied Children. H. H. NEILSEN (1965), Munksgaard, Copenhagen, pp. xii + 269. 30 D.K.

THE DAY of studies comparing cerebral palsied and "normal" children is mercifully over. Researchers have realized that the cerebral palsied are so varied in etiology and symptomology that generalizations about them have little meaning. This conclusion emerges again from Dr. Nielsen's review of the literature on psychological studies both of "brain injured" children in general and on cerebral palsied children in particular. Her review, which forms the first half of her book, covers a wide range of work on this topic and she takes considerable trouble to relate the findings of individual studies to each other. Although the group comparisons of most studies indicate greater perceptual and conceptual impairment among the cerebral palsied, the range of performance levels among these and among the "normal" controls is usually found to be considerable. Consequently, impaired performance has limited value as an indicator of neurological dysfunction in any individual instance. Dr. Nielsen also reviews studies on behavioural and personality disturbances. However, here again, the symptoms are not found to be as regular in their diagnostic associations as is commonly supposed.

Results of this kind have led later researchers to study more homogeneous sub-groups of cerebral palsied children. In her own study, described in the second half of the book, Dr. Nielsen limited herself to investigating groups of twenty spastic hemiplegic and twenty paraplegic children, between 6 and 15 years of age, with "I.Q.'s of at least 75". She compared them with a control group of forty children matched in pairs with the spastic children for age, I.Q. and socioeconomic background. Her control group was selected with unusual care in that all the children were examined by a paediatrician to exclude signs of physical handicap and brain injury. The study deals with three main topics; perceptual-motor performance, 'learning efficiency', and personality. In addition the children's parents and teachers were interviewed. The design of the study thus allowed a very broad assessment of the children to be made, although, as the author admits, some of the measures were rather subjective. The choice of tests was interesting, in that Dr. Nielsen included two tests, the Goldstein-Scheerer Cube Test and Rey's Labyrinth Test, which allow the experimenter to go beyond the scoring of a "one-time" performance. The findings from both these tests revealed how much information may be gained, if the processes underlying a child's response are observed. For example, almost three quarters of the children in both spastic and control groups were able to correct their initial failures on the cube test after they had been given additional clues. Similarly, on the Rey Test the spastic and control groups were found to be distinguished more by the pattern of their learning curves than by the mean number of trials to criterion. Dr. Nielsen's study abounds with many further interesting findings. These often reflect within-group rather than between-group differences, as she herself points out. One wonders consequently whether future studies should not concentrate on analysing the nature of impaired performance, rather than on identifying its diagnostic associations.

Dr. Nielsen provides valuable discussions of many basic issues, but it is a little difficult to know at whom her book is directed. The treatment of her findings assumes familiarity with psychological terms and methods, yet the psychologist will find her detailed descriptions of such well-known psychological techniques as the Bender Gestalt test rather tedious. Her English is often original, but never incomprehensible. There are a number of misprints but the lay-out of the book is clear and attractive.

K. WEDELL

Neurological Organization and Reading. CARL H. DELACATO. Charles C. Thomas, Springfield, Illinois, 1966, pp. x + 189. \$7.50.

DR. DELACATO, the author of this book, is convinced that a close relationship exists between linguistic skills, especially reading ability, and 'neurological organization'. This organization includes the control of lower levels in the central nervous system by higher levels, culminating in the cerebral cortex; the development of bilaterality, binocularity and binaurality; and finally the establishment of dominance by one cerebral hemisphere over the other. He appears to believe that not only has the evolution of cerebral dominance made man superior to all other animals, but also that the ability to use language depends upon it. As a corollary, all those with incomplete dominance, as assessed from incomplete or conflicting laterality of hands, eyes and feet, tend to have some impairment of linguistic ability. Anyone who exhibits a reading disability which cannot be traced to hereditary factors or to brain injury "suffers from a lack of exposure to the stimuli which provide the development of adequate neurological organization". This lack of appropriate stimulation he considers may be remedied by giving special physical exercises designed to develop organization, and especially dominance, for instance, crawling first with the right arm and leg moving together, and afterwards with the right arm and left leg; and exercising the eye on the side of the dominant hand while occluding the other eye. Exercises such as these are claimed to establish organization at all levels of the central nervous system, and also to improve reading ability.

This thesis is illustrated by experiments performed by ten independent investigators who were interested in Dr. Delacato's ideas. In the first of these, Carrick and Watson found a correlation of only 0.35 between scores on laterality tests and reading test scores of eighty-seven third grade children; but only the worst readers obtained laterality scores significantly lower than those of the others. This indicates that, as already known, among backward readers there are some who are incompletely lateralized.

Other experiments showed that backward readers who were given a programme of Dr. Delacato's exercises designed to develop organization did improve their reading skills to a greater extent than did those given remedial reading teaching. It is not clear if lateralization was also improved in the former; nor whether other forms of physical training in bodily coordination for those deficient in motor control could not have produced similar results (though there is a suggestion to the contrary). It is also impossible to say if the remedial reading teaching was of a suitable kind.

However, one would be more inclined to accept the efficacy of this form of treatment, at least for some backward readers, were it not for the exaggerated importance Dr. Delacato attaches to his highly speculative theory of 'neurological organization'. Even if there is a gradual evolution of neurological organization in the child such as he postulates, there is no proof that deficiencies exist at different levels, nor that organization can be improved by the exercises he advises. Again, not all children with linguistic difficulties exhibit incomplete laterality; and not all those with incomplete laterality are linguistically retarded. What is needed is a test of the practical application of Dr. Delacato's thesis, by means of an intensive study of the effects of his exercises on backward readers with incomplete laterality, as compared with the effects on other types of backward reader. One needs to know whether there is more reading improvement in the former than in the latter, and if laterality is improved also in the former. An analysis of the effects of the different Delacato exercises might be valuable, and these should be compared with the effects of other forms of physical training.

It might be undesirable to dismiss out of hand the possibility that Dr. Delacato's form of treatment is effective, in spite of the peculiar theory on which it is based. But certainly further experimental investigation is required before its value can be accepted.

M. D. VERNON

The Birth of Language: The Case History of a Non-Verbal Child. SHULAMITH KASTEIN and

BARBARA TRACE. Charles C. Thomas, Springfield, Illinois, 1966, pp. 182. \$6.75.

In this book a mother describes how she taught her non-speaking child to use and understand language. The child was brain-damaged as a result of prematurity and, up to the age of 3½, did not speak or understand words or gestures. She was unable to anticipate, recognize or recall anything in the environment. She was also extremely difficult in her behaviour. By the age of eleven her use of language was normal and she was functioning in nearly all respects as a normal child.

This remarkable success was achieved by language training carried out largely by the mother, under the guidance of a speech pathologist. It involved several hours daily of lessons by the mother, together with a constant effort to teach the understanding of language during all the child's waking hours.

The child's history and language difficulties are described in a clear and penetrating way. This makes the book valuable as a case study and as such it will be of interest to those whose work enters the field of language disorders. The teaching methods are described in detail, which makes the book valuable for speech therapists and teachers of non-communicating children. It should be helpful to those responsible for the treatment of autistic children, since many of these children have similar language difficulties.

The book tempts one to hope that some non-communicating children might be saved from a permanent language handicap if sufficiently intensive language training were given at an early enough stage. But it is clearly too much to hope that every non-speaking child should have a mother as intelligent and devoted as the author of this book.

M. A. CUNNINGHAM

Mothers of Retarded Children. WALTER H. EHLERS. C. Thomas, Springfield, Illinois, U.S.A.,

1966, pp. xxi + 166. 44s.

"THIS BOOK is the result of a study in depth of twenty-four mothers of mentally retarded children, conducted in the Cambridge Service for Retarded Children, Department of Public Health, Cambridge, Massachusetts, and completed by June, 1961. The study sought to discover how the mothers learned that their children were retarded, and how they went about seeking help." So opens the Introduction. This admirable aim could be achieved by sophisticated techniques which were obviously not at the disposal of the author. The repetitious outline of the research problems and the

description of the inadequate methods are followed by the realization of the limitations of the study. These could hardly be exaggerated. The author warns us unnecessarily not to generalize from this small sample to other situations.

Although there are eight tables, these provide almost no useful data and are largely tabulated descriptions of a "Yes, no, don't know, white, coloured, high school, college" type. The author eventually goes on to a description of the Cambridge clinic service which is of local interest only, and of the current and future services for the retarded in the U.S.A.

The material in this book would make a poor scientific paper. It is difficult to imagine the type of reader who might benefit from meeting it in book form.

J. T. R. BAVIN

7th INTERNATIONAL CONGRESS ON MENTAL HEALTH

London, 12-17 August 1968

TO MARK THE 20TH ANNIVERSARY of the founding of the World Federation for Mental Health in London in 1948 THE NATIONAL ASSOCIATION FOR MENTAL HEALTH will act as host to the 7th International Congress on Mental Health in London from 12th-17th August, 1968.

The theme will be KEYS TO PROGRESS—Mental Health Education, and the programme will be linked to the World Federation's present three-year programme on "Mental Health Aspects of Education". The Congress is open to anyone interested in mental health, whether lay or professional. For further information about the Programme, fees, etc., when this is available, please write to: The Organizing Secretary, 7th International Congress on Mental Health, 39 Queen Anne Street, London, W.1.

DREAMS OF THE MALE CHILD: FOUR CASE STUDIES*

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IN THE past fifteen years, the discovery of objective electrophysiological correlates of dreaming has led to the apparent resolution of many age-old questions concerning dreams (when they occur, their duration, etc.: see, e.g. Foulkes, 1966) and has held forth the promise of solving still others among them. As yet, however, little new theory has accumulated on the significance of dream content, partly because researchers have focused upon psychophysiological questions rather than purely psychological ones, but also partly due to the inherent complexity of the dream process coupled with the inadequacy of concepts and methods applied to its understanding.

As Freud (1955) suggested, one strategy by which the almost insurmountable complexity of dreaming may be rendered more manageable for research purposes is to focus upon the dreams of children. Freud found the blatant wish-fulfillments of pre-school children's dreams, collected in a highly unsystematic manner, an especially telling argument in favour of his particular interpretive scheme for understanding the dream. In later childhood and pre-adolescence, cognitive operations have not yet achieved their full adult elaboration and the sophisticated defensive or self-deceptive manoeuvres, through which dream complexity is often assumed to arise, are less numerous and more transparent than they are among adults. One might well imagine that, even here, dreams collected in a systematic yet unbiased fashion would illuminate general features of the dream process and its typical product.

The electrophysiological methods of modern dream research offer the technology to implement such study. It is only very recently, however, that these methods have been extended from psychiatric populations and college students to children. We (Foulkes, *et al.*, 1966) have reported observations made upon thirty-two boys, aged 6-12, each of whom spent 2 nights in our laboratory and was awakened during the first four periods of dreaming sleep (EEG sleep stage 1 accompanied by rapid eye movements [REMs]) on each of these nights.

In that study, it was observed that manifest dream content often contained references to major foci of juvenile and pre-adolescent social adjustment (relations with parents, siblings, and male peers; recreational or play settings and activities) and that the treatment of these situations in the boys' dreams did not, in general, seem to be markedly disguised, nor to be characterized by intrusions of socially unacceptable impulses or of bizarre symbolism masking such impulses. The methods of dream analysis in the study were statistical and nomothetic in character. Content

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analyses were conducted for major character, setting, and plot categories, and reliable ratings were performed along such dimensions as distortion, activity-passivity of the self character, and hostility. The authors indicated some dissatisfaction with these methods, however, and argued that a comprehensive understanding of the dreams of boys at this age-level may depend on qualitative analysis of individual children's dreams, rather than upon statistical analysis of the dreams of large numbers of children.

The bases for dissatisfaction with ratings and content analyses are not difficult to see. Compared with the fertile and broad hypotheses of the psychoanalyst, with his lengthy and subjective dream-by-dream analyses, the rating and content-analysis methods have produced much data but little understanding. It is instructive that, when proponents of the rating (Foulkes, 1966) and content analysis methods (Hall and Van de Castle, 1966) give us their fullest picture of the "meaning" of dreams, they rely heavily upon the qualitative approach (Foulkes, 1966, ch. 3; and Hall, 1959).

It is undoubtedly unfair to portray the qualitative and quantitative methods of dream analysis as mutually exclusive alternatives. Ideally, one suggests ideas tested by the other. But, while there have been numerous statistical studies in the past decade or so of the better samples of dreams now available with the advent of electrophysiological dream detection, there have been few attempts to supplement such analysis with the more intensive and qualitative methods of traditional dream analysis (a notable exception is the study by Offenkrantz and Rechtschaffen, 1963). Although such studies might supply a context in which to understand the fragmentary and often unrelated findings of quantitative analysis, they are, apparently, out of style. In particular, it is felt that qualitative analysis can, by selective presentation and enforced articulation with preconceived theory, be made to prove any point.

The present study is an attempt to apply qualitative analysis to children's dreams collected with the aid of electrophysiological techniques of dream detection. The subjects were four pre-adolescent boys. In recognition of the dangers inherent in a qualitative approach, the present study has observed several precautions. Firstly, the author is not an adherent of any of the classical schools of dream theory. Secondly, his approach has been deliberately naive, that is, he has tried to approach the boys' dreams as the relatively unsophisticated student of psychology might, noting correspondences with classical theory where they seem fairly obvious but without attempting to fit all dreams into any single framework. In a field where theory has often run far ahead of observation, it was felt that such an approach might be productive of a much-needed fresh orientation toward the dream. Thirdly, the generally very brief nature of the boys' dreams has permitted relatively complete exposition of their content, rather than a selective reporting thereof. Fourthly, the first two brothers were among those boys in our previous study with the most vivid and bizarre mental content reported from REM sleep, while the other two brothers had reported relatively everyday and unintense experiences from REM sleep (ranks of 3 and 5, and 30.5 and 22, for subjects 1 and 2, and 3 and 4, respectively, on a scale of dream imaginativeness that had been applied to all such reports). Differing subject types were deliberately included to insure that any conclusions reached in the present study would encompass both kinds of dreams, and that any particular view-

point on the nature of dreaming would face a comparable challenge in terms of its ability to handle widely differing kinds of dream data, not all of which might appear immediately compatible with its basic assumptions.

METHOD

Each boy spent 6 nights, spaced at weekly intervals, in the laboratory. On each such night, conventional electrode attachments were made for the recording of EEG from the parietal and occipital regions of the cranium, of the EOG (electro-oculogram) as recorded from the outer canthus of each eye, and of the EMG (electromyogram) as recorded from the submental region (Jacobson, *et al.*, 1965). Continuous night-long recordings were made on an Offner Type R Dynograph, with four channels (one bipolar EEG, two monopolar EOG, and one bipolar EMG) per subject.

The subjects slept in comfortable beds in quiet, darkened, rooms. Four awakenings were scheduled each night, to be made during each of the first four unambiguous REM periods of that night. On three of the 24 experimental nights (one for subject 1 and two for subject 4), it proved possible to make only three awakenings, as a fourth dream period of normal duration did not appear during the approximately 9 hr period (9 p.m. to 6 a.m.) during which electrophysiological recordings were taken.

Dream periods were detected by the concurrence of a low voltage EEG, rapid spike-like tracings of ocular activity, and an EMG tracing of considerably diminished amplitude as compared both with wakefulness and with non-REM sleep. Awakenings were made on the occurrence of major body movements (seen as gross artifacts in all recording channels) occurring during REM sleep, since Wolpert and Trosman (1958) have demonstrated that they signal the completion of single dream episodes. Awakenings were made at intervals of increasing duration following rapid eye movement onset across the several dream periods of the night (a median of 9.5 min for the first dream period, 12.5 min for the second, 16.0 min for the third, and 20.0 min for the fourth), in recognition of the lengthening of uninterrupted periods of REM sleep over the course of the night (Dement and Kleitman, 1957).

Awakenings were sudden: a light was turned on beside the subject's bed and he was called by name over an intercom system linking his room to the control room. Upon some response, the subject was asked "What were you dreaming about?" If the subject could recall nothing, he was asked to "think for a moment or so to see if you can recall anything". If, after a pause of 30 sec or so, he still could recall nothing, he was allowed to return to sleep.

Where some substantive content was recalled, the subject was asked, on completion of his spontaneous report, whatever questions seemed necessary to clarify apparent inconsistencies in the original report or to identify persons or places in that account. Questioning was kept to a minimum, however, to reduce the possibility of deliberate confabulation or of extensive secondary elaborations.

Immediately following the removal of electrodes at the conclusion of each night's run, the subject was taken to a room where he listened, one at a time, to tape recordings of those of his nocturnal interviews that produced some substantive content. He was then asked if he could recall anything else of the experience he had

reported during the night, and an unsystematic set of questions was asked to illuminate the connection, if any, between the dream and his waking experience.

It should be stressed that these morning interviews were not free association periods in the psychoanalytic sense, i.e. no probes were designed to tap indicators of unacceptable impulses. These were contraindicated by the nature of the interviewer's relationship with the child and his parents, and by the desire, in line with the deliberately naive perspectives of the study, to let the dreams speak for themselves.

Several days after each night's run, cards containing typescripts of each nocturnal interview were mailed to the boy's mother, who had previously agreed to write comments on the back of the cards. The mothers had been told that it was hoped that "you might be able to shed some light upon the possible meaning of the dreams, particularly in view of your relatively complete knowledge of the boy's daily routine and of any unusual events which might have occurred in the few days before the boy's night in the laboratory". The mothers were also told that it might be best if the boys were not aware of their role in the study, as it might inhibit the spontaneity of dream-reporting in the laboratory. Both mothers appeared to comply faithfully with our wishes in this respect, and both returned each set of cards, generally with helpful comments on why they felt that the boy might have dreamed of the characters, settings, and activities that he did.

Each boy received \$50.00 for his service in the experiment, and each, with the possible exception of subject 4, appeared to remain fairly well motivated during the course of it.

RESULTS

Overall, dreams were recalled on seventy-nine of ninety-three awakenings, for a recall percentage of 84.9 per cent, a value slightly superior to the figure (83.3 per cent) reported from the compilation of previous studies of REM sleep among adult subjects (Dement, 1965). As was also noted in our previous study (Foulkes *et al.*, 1966), where dream content was reported, it was generally somewhat fragmentary in quality (a mean substantive word count of 86.8 words per report).

In the examination of the nature of the dream content underlying these group statistics, an attempt was made to sort the dreams of each boy into categories in which they naturally seemed to fall. Following this preliminary classification, the dreams and related associative material constituting each such category were examined in an attempt to determine their meaning and significance.

Subject 1

This boy was aged 9 years 5 months at the onset of his experimental service. He is the older brother of subject 2, and of working class background. His WISC IQ was 107 (109 verbal and 104 performance). He recalled dreams on all twenty-three awakenings made during REM sleep; the mean substantive word count for these dream reports was 107.3 words.

This subject's dreams on the first four nights of his experimental service reflected an overwhelming sense of forces outside his control. In four of these dreams, everyday objects in the world of nature were transformed into destructive monsters: in 1-1,*

* Dreams are hereafter identified by their time of elicitation, 1-2 referring, for example, to the report from the first night, second REM-sleep awakening.

a bug was transformed, under a magnifying glass held to the sun's rays, by a figure the subject said resembled his father, into a fearsome giant who "tears up" the city and kills people; in 2-2, a lily in the park, when picked by the subject, was transformed into a monster that killed a man; in 3-4, flowers the subject picked from a car, but which he discarded as he didn't like their odour, were replaced by a charging moose; in 4-1, a bird was transformed into monsters that ripped up the yard surrounding the subject's family's summer cabin and tipped up the dwelling on its side. In an additional dream, 4-2, a red traffic light, at which the subject had stopped while on a walk with a girl, became a monster that eventually was killed only when the Air Force took charge of the situation.

Three additional dreams involved the interruption of recreational activities by a supernatural force: in 3-1, a giant stopped a family outing as the subject and his family were about to go swimming; in 3-2, a spirit interfered with the subject's play in a park; in 3-3, a monster interrupted a sailing trip by the subject, his mother and his father, and, once more, the Air Force had to be called out to subdue the ogre.

Two dreams from the subject's first night in the laboratory contained references to dangerous magical powers held by others—in 1-2, there was a woman with a powerful mirror who could make things disappear; in 1-3, a magical kangaroo could, by touching people, "conk them out".

Three dreams had misfortunes of a more natural order befall, or threaten to befall, the subject. In 2-1, his bicycle hit a bump and he hurt himself; in 2-3, his grandfather, as a ship's captain, barely managed to avoid a large rock toward which his vessel, containing the subject, was heading; and in 2-4, the family car, with the subject's father at the wheel, sped out of control on a mountainous road and crashed in a ravine.

At the level of manifest content, the fear which pervades these dreams of the first four nights is predominantly of supernatural forces. But in 2-1, 2-3, and 2-4, none of which involves monsters or magical beings as such, there is also manifest concern for the integrity of body and self. What is it that threatens this integrity?

Although neither this subject, nor the others in the study, had dreams with manifest reference to the laboratory or experimenter, it is possible to view some of his dreams as reflecting certain aspects of the experimental régime. Thus the magical or supernatural powers fearfully attributed to others, particularly in his earlier nights of laboratory service, may refer to the experimenter and his impressive but fearful "brain-wave" machine. Likewise, the theme of interrupted activities especially prominent in the dreams of night 3 may refer to the experimental interruption of sleep and dreams.

Even in the event that some laboratory dreams may reflect circumstances of the laboratory environment, however, their usefulness for making inferences of a more general sort would by no means be diminished. As Freud pointed out, dream content is frequently overdetermined. It may also be of considerable interpretive significance to notice how the relatively constant stimulus of the laboratory régime (submitting one's self to the control of a "mind-reading" adult male) is differentially reflected in the dreams of different subjects (why, for instance, is it viewed so fearfully by subject 1 but not by the other subjects in this study?).

In the more disguised and bizarre monster and spirit dreams of the series, allusions to the Oedipal situation as conceived by Freud are abundant, and provide some insight into the sources of this particular subject's anxiety in the laboratory. The destructive forces of his supernatural dreams, when they possess any specific effect (rather than merely causing havoc in some general sense), appear to be capable, most of all, of disrupting the equilibrium of the nuclear family unit, the mother-father-son network of interpersonal relationships so extensively examined by Freud. Thus in 4-1, they tipped over the family's summer cabin and, in 3-1 and 3-3, interrupted family activities.

What kinds of forces would disrupt this family unit? In the two instances where something the subject himself did was responsible for an ensuing malevolent transformation, it was the picking of a flower (deflowering) that unleashed death-dealing forces, in one case in the form of a phallic moose figure. In 1-1, the father served as the medium through which the fearsome giant became active. In these dreams, then, there is the suggestion both of Oedipal wishes and of that fear of father that forms another side of the Oedipal triangle.

But it is more than paternal retribution that is portrayed in such ferocious terms. Neither the magical bird of 4-1 nor the kangaroo of 1-3 seem particularly apt paternal symbols and probably reflect powerful and dangerous emotions or instincts perceived within the subject himself. His own feelings constitute part of the danger, particularly in terms of whether they can be adequately controlled by external constraints imposed upon their expression (the red light dream which immediately follows the bird-to-monster dream).

In 1-3, the magical kangaroo was subdued by the subject himself. This heroic resolution, and the subject's general imperviousness to actual harm, suggest a sort of magical and wishful thinking, no doubt promoted by the unreality in terms of which he is conceiving life-related events. But the resolution of 1-3 is the exception. In his other dreams, the subject requires outside help to quell hostile forces (e.g. 2-3, 3-3, and 4-2) or, more commonly, the destructive force is never brought under control at all (1-1, 2-2, 3-1, 3-4, 4-1).

With dream 4-3, there was an abrupt shift in the quality of this subject's dreams: monster dreams yielded to a series of dreams consisting mainly of hallucinated recreational scenes with family or friends. Some of these dreams (6-1, playing baseball with his brother; 6-2, eating hamburgers and sipping Cokes with a friend, then going for a ride in the country with his family) were minimally distorted. Others, however, were somewhat less ordinary in their content.

In 4-3, the subject, with a new fishing pole, pulled in a "giant of a fish" that turned out to be only a sucker. Eventually his father took the pile of suckers caught by the subject, threw them into the water in a great big pile, and dispersed them with a shotgun blast. At the conclusion of the dream, family members were eating hot-dogs, except for the subject, who was still in the water fishing. In the immediately succeeding dream (4-4), the subject's sister was successful in her fishing exploits.

At a family outing in dream 5-1 the subject's father was getting married to a woman other than his mother. Water symbolism was especially prominent here: at the start of the dream, father and son were fishing; then the father put on his swimming trunks and dived in the water; it then "hailed and hailed, and left about an

inch of water"; another man on the bank of the river then jumped into the water and began to swim.

In 5-2, a little boy came up and slapped the subject while he was fishing on a Cub Scout outing. The boy was apparently annoyed because he was not old enough to be a Cub Scout and the subject lent the boy his fishing pole. The den mother (the subject's own mother) then cooked some hotdogs for the boys and the group went down to the pond to skim rocks across its surface.

In the following dream (5-3), the subject fell into the water while fishing with his dad, who then pulled him out. On the way home, the family car ran out of petrol, and they had to push it.

In both 5-4 and 6-4, the subject's kite "busted" while he was playing in the park. In 5-4, the sequence included playing house, his mother picking him up in the car, and finding a stray dog on the way home. In 6-4, he went into the home, ate a candy bar, and read "Mad Man".

6-3 might well be called the subject's "primitive paradise" dream. He and his brother

were on a big ship and had been sailing for about 200 miles. Then we came to land and got off, climbed around, climbing trees and eating coconuts. We had lots of fun. Then it started getting dark. We slept overnight there. Then we got into the boat and took off for home. There was only one thing wrong: the boat didn't work. So we walked out toward our house. We lit a cigarette.

It is possible to view the later, less bizarre dreams of this subject's dream series in somewhat the same terms (psychosexual development, Oedipal situation) which seem to fit many of his monster and misfortune dreams. In a number of these later dreams, the subject appears to be portraying his ineffectiveness and psychosexual immaturity. In 4-3, the subject's fishing pole is adequate to catch only "suckers" (to regress to oral sadism; see also the oral and aggressive consequences of the kite accident in 6-4), even this meagre fare being demolished by his father's shotgun, and in 5-2, the concern with being old enough to do things is present in clear form, and once again frankfurters assume the role of an ultimate reward. Dream 5-3, among other things, portrays a continuing dependence upon the father to "bail him out" of difficulties.

The sequel to this act of dependence upon the father, however, is a portrayal, in turn, of the father's foibles: the car he propels runs out of petrol, and his son must help push it along. In 5-1, on the other hand, the father is terribly phallic, but now is no longer married to the subject's mother—he can be replaced, and perhaps by a shadow of the self that jumps into the water and begins to swim at the end of the dream.

Wish-fulfilment in its most blatant form appears in 6-3, with the boys' return to primitive oral satisfactions (coconut milk). Making their way back to reality is hindered by the inadequacy of their vessel, but the lighting of the cigarette seems to imply some positive wish to turn to a more genital or adult way of life.

Sibling rivalry is prominent in several dreams of the subject's later nights. In

6-1, for instance, he is competing with his brother in an athletic contest, and in 4-4 his sister proves to be a better fisherman than he.

Overall, the dreams of subject 1 seem to adhere fairly well to the picture of childhood psychic forces drawn by Freud. The initial dreams portray the kind of emotional underworld visualized by Freud, and the kind of intrafamilial network in which he imagined such emotions to be meshed. Later dreams in this subject's series indicate less what the subject fears on account of his own infantile impulses, and more that to which he now actively aspires: a masculine competence (symbolized repeatedly by fishing) that still seems to be tied to his mother as object.

While manifest wish-fulfilment is clearly present in several dreams of this series, once in oral regressive form (6-3) and once in an apparent return to the focal Oedipal conflict (5-1), it appears that many more of them express, realistically, the subject's frustration and inability to achieve the role toward which he strives (the fishing pole that only gets suckers, the kites that "bust", etc.). At another level, of course, the dreams in which the subject is unsuccessful might also be read as reflections of a crippling castration complex aroused by his own Oedipal fantasies.

It is of some interest that the subject's dreams seem to fall so clearly into two subgroups, marked off by the time of their occurrence during the six experimental nights. Of possible relevance here is that he read "scary" comic books before retiring on two of his experimental nights: a monster comic on night two, and "Metamorpho" (!) on night four. From the morning association periods, it became clear that much of the bizarre and other-worldly qualities of his dreams on these nights could be traced back to these pre-sleep experiences. This same relation to recent media fantasy experiences was observed on other nights where there was no immediately pre-sleep exposure to pertinent media content. From both this subject's dreams and those of his brother (subject 2), i.e. those of the boys selected for the bizarre quality of their nocturnal dreams in our previous study, it appears that bizarre childhood dreams may owe as much to the prefabrications of the mass media as to any spontaneously-generated unconscious symbolism. Subjects 3 and 4, selected for the everyday quality of their nocturnal dreams in our previous study, were not addicted to the same type of media content. The comics undoubtedly have no simple causal role in relation to dream bizarreness in that they are selected by boys already "ripe" for their latent messages. But it is interesting to speculate that such materials may add considerably to the symbolic vocabulary of the nocturnal dream for those boys who consume them most avidly.

Subject 2

This boy was aged 8 years and 6 months at the start of his experimental service. As already noted, he is the immediately younger brother of subject 1. His WISC IQ was 115 (116 verbal and 111 performance). He recalled dreams on all twenty-four awakenings made during periods of REM sleep, with a mean substantive word count of 107.2 words per dream.

To the extent that any single theme may be said to have dominated this subject's dreams, it was the theme of growth, of becoming a "big guy", and of the competition and pitfalls along the path to adulthood, particularly to an adventurous masculine kind of adult role.

The subject's father appeared in several of his dreams as a figure for identification and as his source of protection in time of crisis. In 1-2, father and son went on a motor-scooter excursion to go fishing and mountain climbing. In 1-4, the son was in a submarine under attack by a big monster, but, along with his father, managed to kill it with torpedoes. In 2-3, he went hunting with his father and they shot a stag deer sitting on a big rock, then went home to eat their quarry. In 3-1, his father shot a fish that the subject was trying to land with a new fishing pole but that proved to be too big for him to handle. In 4-1, a space adventure, the subject's father shot down threatening creatures with his space gun. In this dream, the father "had the biggest space ship, to show us how". In 5-4, the subject and his father, along with their dog, were chasing a rabbit; the father shot it and it was then sold to a lady living next door.

The frequent and explicit mention in this subject's dreams of the father in a kind of "big brother" role, with his son as an apprentice, suggests a very different kind of relationship to him than was evident for his older brother. In the paternal shooting, with the acquiescence and encouragement of the subject, of the masculine stag and the legendarily fertile rabbit, there is a suggestion of an idealized resolution of the Oedipal situation: identification with the father and a smothering, for the time being, of potentially disturbing sexual impulses, at least within the confines of the family (the rabbit is displaced to the lady "next door").

In other of this subject's dreams, the big-guy theme appeared in the absence of explicit identification with the father. In 1-3, he was in a tree playing "playhouse" and "acting like a big guy", chinning himself on the branches of the tree. In 1-4, he manned a "flying sub" like that on television's "Voyage to the Bottom of the Sea". In 2-2, he was a man fighting in Vietnam, dropping bombs on the "Japanese". In 2-4, he had a new bicycle (the money he received for serving in the experiment was to be spent for a new bicycle) and was riding it, doing all sorts of tricks with it. In 4-3, he and a friend, both "about 15 or 16", rode their motor-scooters up to the mountains to fish. In 4-4, he and his older brother "got to go up in a big airplane" while his little brothers and sisters had a toy plane and could only "act like they were flying". In 6-3, he was a railroad engineer and smashed his train into a car stalled on the tracks, while in 6-4, he was with older friends who were shooting crows and pigeons with a BB gun.

That there is recognition that the road to becoming a "big guy" is not without its hazards is evident, however, in a number of the subject's dreams. In 1-1, the chain on his bicycle split as he and Felix the Cat, a cartoon character, were riding their bikes; the bicycles then changed to a plane, but the plane crashed. In 3-2, he was riding a "go-cart" at 70 m.p.h.; it crashed, and again a plane appeared. This time, however, the plane did not crash. In 4-2, the chain on his bicycle broke and he crashed once again.

A psychosexual factor as one source of these difficulties is suggested by several of the dreams: the position of being too immature for the successful enactment of an adult sexual role (again symbolized by fishing) but too mature for the sexuality of the focal Oedipal situation. In 4-3, the subject was unsuccessful in his attempts at fishing; he found one river (mother?) "too deep", but all other places were too shallow. In the subsequent dream, 4-4, it proved too foggy for fishing, so the boys

turned to airplanes (a more self-propelled variety of eroticism?) as a substitute activity. Finally, 6-2 contains a highly explicit, yet symbolic, cautionary message on the dangers lurking beyond the delicate psychosexual equilibrium of the latency period:

I put my hand in a fishpond, and there was a snake in there. And a man [a friend's father] said "Don't put your hand in there". And I didn't. I was looking for a fish. When I was putting my hand in the fishpool, a guy threw a match over into some paper. Then the fire-engine came and put the smoke out. My Dad was walking around where the fire was. The fireman gave him a fire-hose and he helped spray it.

Another source of difficulty in the struggle to gain maturity is evident in a number of the subject's dreams, which portray life as a competitive race, a not unnatural viewpoint for a boy besieged by brothers and sisters. In addition to the bicycle, go-cart, and airplane dreams mentioned above, other of his dreams contained competitive situations, sometimes with his older brother as another participant. In 1-3, this brother displayed the greater acrobatic skill, "jumping down this tree, hanging from limbs, and then jumping from that one". In 2-1, Donald Duck was racing boats with another character, whose boat, as it had lighter wood, flew in the air and won the race. In 2-4, his bicycle trick-riding was interrupted by an errand for his mother; on his return, he found his older brother riding his bicycle. In 3-1, the subject ultimately caught a 3-lb fish, his older brother a 2-lb fish. In 3-3, the cartoon character Fred Flintstone was fixing a racer, following which he and his friend Barney Rubble went to a football game. In 3-4, the subject ran a race over hurdles against his brother, and beat him. In 4-1, following the space mission with his father, the subject could not locate his space ship, "so I had to go to my big brother's and he went to mine". In 4-2, he accidentally wrecked not only his own bicycle, but also that of his brother. In 5-1, he and his brother, as a team, won a bicycle race, but then "the bikes toppled over". In 5-3, he and a younger brother were flying kites, but the wind tore his. After his was fixed, it still flew lower than that of his brother. In 6-1, the subject was playing marbles, but lost.

In spite of these realistic nocturnal perceptions of the hazards along the path to maturity and of the intrafamilial competition to be faced, the dreams of subject 2 still show a basically future-oriented stance. He does not seem to be caught up, as is his brother, on emotional residues of previous developmental eras. His greater identification with his father indicates the choice of a model for future growth, and his frequent assumption of "big-guy" roles bespeaks much anticipatory socialization. One clear indication of the differences between these two brothers lies in the contrast between the fearsome monster dreams of subject 1 and dream 5-2 of the present subject:

I saw these monsters. They were all colours. They were friendly, and we made friends, then I went over and played with them. The other guys wouldn't play with them because they thought the big monster was mean. Then we played baseball. I was pitching to him and he batted it, clean out, and then a monster caught it and it was an out.

There seems to be a realization here that the path to maturity lies not in the repudiation of infantile sexuality, but in its reshaping into more socially acceptable forms.

Subject 2's 3-1 and his brother's 4-3 provide another interesting contrast: similar in exposition, they differ in resolution. In both dreams the fish snagged was "too big", and the father shot it, but in the case of subject 2's dream without the

undertone of ridicule in subject 1's 4-3, and with an ultimately successful outcome (catching some fish).

Subject 3

This boy was 7 years and 9 months of age at the start of his experimental service, and came from an upper middle class family background. He is the immediately younger brother of subject 4. His WISC IQ was 99 (95 verbal and 103 performance). He recalled dreams on seventeen of twenty-four awakenings made during REM sleep; the mean substantive word count of these seventeen reports was 79.6 words.

The struggle to achieve adult status, and its attendant hazards and competition, played a strong role in his dreams, much as they did in those of subject 2. Sometimes there were wishful elements in them (in 1-1, his football team won a victory; in 1-2, while fishing in the mountains and after seeing a bear and its cub, he caught four fish while his younger brother and a friend caught only three apiece; in 6-1, while a boy was ice-fishing with his father, the boy caught two fish and the father one). At other times, however, there was a touching honesty in his evaluation of his competence. In 2-1, for instance, he, his older brother, and his Dad, drove a brand new station wagon to the mountains to go fishing. He caught one fish, his brother three, and his Dad ten. In 3-1, a dream collected on the Fourth of July weekend, there is an elegant and seasonal symbolic representation of the relative psychosexual maturation of the subject, his younger brother, and his older brother:

It was on the Fourth of July. [My big brother] had a big firecracker, and he put it in a tin can and lit it. It made a pretty big dent in it. [My little brother] had one and lit it, and he thought it would make a great big bang, except it just made sizz . . . [firecrackers] called snakes. You light them with matches and they grow. I was lighting some of those, and some firecrackers too. Sometimes they went bang, sometimes sizz. My Dad was watching us do the firecrackers.

In one set of his dreams, the subject seemed to symbolize frustrations along the path to psychosexual competence, with paternal figures as the agent of frustrations in most instances. In 1-3, for instance, the subject, his younger brother, and a friend, wanted to pick some cotton from a field. The "bossy" King, a man who kept slaves, would not allow them access to the cotton. The King's daughter, however, came along and told the boys that she would let them have some cotton.

In 2-3, a character named "Parker", from the television series "McHale's Navy", made a nuisance of himself by squirting other men on shipboard with a fire-hose. The men got mad, took the hose, and turned it upon the now helpless Parker. Dream 2-4 shed some light upon the multiple significance of this Parker character, while continuing the theme of retribution against an adult male. In this dream a man had his car parked (a parker) in the lot adjacent both to the laboratory and to the building in which the subject's father works. He was there to pick up the subject's father (much as his mother does, in the subject's company, in waking life), but as they left the lot, the man's car got a flat tyre from running over some nails that had been spilled, accidentally, in the lot. The man's car was large (as is that of the subject's father but not that of the experimenter) and white (as is that of the experimenter but not that of the subject's father).

Finally, in dream 3-3, the subject and a friend were playing in a sandpile. They

decided to make a house, and went over to the garden to get some rocks. There they saw a "gardener" snake, tried to catch and kill it, but were unsuccessful in their pursuit of this phallic organism.

Another set of dreams, however, suggested positive identification with the father and the role he fulfils. In 2-1, for instance, the subject took a fishing trip with his father in the brand new family car. In 4-3, he, his older brother, and his Dad listened to an old man in the "wild country" discussing his cabin and his life in the wilderness. The tone is one of respect for a man who knows his way around this country. In 4-4, his father approvingly photographed the subject's birthday party (his birthday was, in fact, months away). The subject's gifts, presumably from the family, included a host of masculine paraphernalia: regular trucks, army trucks, regular guns, rifles, machine guns, etc. In 6-1, a boy and his father were ice-fishing together. Although ice kept melting and reforming about them, they were unharmed.

In 3-4, the subject was at a family reunion at his grandparent's house with a number of older folks. His grandmother asked him to play a game of ball with them and he assented, indicating a willingness to "play ball" with members of the adult world. A concern for achieving adult-like competence was also seen in 2-2, which was dreamt the day the subject visited a circus. Here, he was watching the precision of the trained bears and of human trapeze artists.

In just one dream is there a suggestion of the danger from without or within that characterized so many of subject 1's dreams: in 6-2, the subject was in the mountains with his father, searching for wood for the fire in their cabin. A baby fox came up, and the subject petted it. It then tried to push him around. The pushing was soon over, however, the other foxes not joining in, and the subject went on with his wood-gathering.

The remainder of this subject's dream output consisted of dream fragments that are difficult to evaluate. In two, he was watching television, remembered the characters (1-4, the Three Stooges; 6-4, Mickey Mouse), but not the plot. In another (5-1), he was in school with his older and younger brother.

The fragment of a school dream was the only school-related dream among the seventy-nine collected in the study, thus confirming the findings of our earlier study (Foulkes *et al.*, 1966) that school as a setting, or school-related plots, are almost nonexistent among pre-adolescent boys. In our previous study, it was suggested that this might have been attributable to the fact that the subjects were studied during summer vacation. In the present study, however, five of the six experimental nights for subjects 1 and 2 were conducted during the regular school year, and five of the six experimental sessions for subjects 3 and 4 were scheduled while they were attending summer school.

This absence of school-related themes may be an important clue in determining the meaning of the pre-adolescent's dreams. The dreams of the present subject, along with those of the other three subjects, suggest that the major concern of the pre-adolescent is the complex developmental task of becoming grown-up, competent, masculine. School, with its still predominantly female teaching staff and its drily academic curriculum, is viewed as simply irrelevant to this task. It is in the games and recreations of the predominantly homosexual peer companionship of this period, and in father-oriented activities, that one tries out his masculine role. For boys in the

community in which the study was conducted, fishing and hunting loom large as such obviously masculine activities, as ways in which one may model on the male role. It is in this sense that the strong trend to recreational settings and activities noted in our previous study may best be understood.

One related respect in which the statistical data of our prior study appear to be misleading is highlighted by the degree to which the dreams of the present subject, and of the others as well, revolve about the figure of the fathers. Mother figures and father figures were found roughly equally often in the dreams of the thirty-two boys in our original study. Here, it appears that the mother is, when present in the dreams of healthy and normal pre-adolescents, more likely to be a supporting player, while the father's masculine competence serves as a central focus for modelling and identification (or for resentment and fear).

Subject 4

This boy was aged 11 years and 7 months at the onset of his experimental service. His WISC IQ was 103 (106 verbal and 99 performance). He recalled dreams on fifteen of twenty-two awakenings made during REM sleep. The mean substantive word count of these fifteen reports was 31.0 words.

His dreams seem to fall into two main classes: those of minimal distortion, in which he is actually or vicariously involved in various masculine recreational pursuits, and those with more distortion, in which there often seems to be an element of danger.

The former type of dream occurred on awakenings 1-1 (playing basketball), 1-3 (watching some friends play football), 2-2 (playing baseball with a friend and making plans to go with him to the subject's family's summer cabin in the mountains), 3-4 (hiking with a friend in the country), and 6-1 (fishing with his uncle in the mountains). These dreams seem readily interpretable as the actual or vicarious rehearsal by the self character of a more adult, masculine role.

The latter type of dream content was more variable in its manifest form. In 2-1, the subject and a male peer were in his family's basement watching it flood with water. In 3-3, the subject and several male peers were riding their bicycles in the country; one boy rode down into a draw, but could not get out again. In 5-3, a pilot's plane apparently came down in the ocean, and he was talking to a person on a passing ship. In 6-2, a circus wagon was being pushed by two elephants, identified by the subject as older animals, and pulled by a horse, identified by the subject as a younger animal. The elephants accidentally tipped over the cart with their forceful pushing.

These dreams may reflect danger attaching to a reactivated object-directed sexuality which will soon (this subject was the oldest and, by far, the most physically mature boy in the study) play a dominant role in the subject's life. In the first two dreams of this group, the male peer companions identify a situation shared in common with other boys at his present level of maturity and psychosexual development. The flooding in 2-1 perhaps stands for the resurgent impulses with which the subject contends. Dreams 3-3 and 5-3 portray more explicitly the dangers involved in the subject's momentum toward maturity, and in 6-2, the horse, in its unity representing the subject, and in its horseness the genital strivings involved, is seen as being thrust forward at a too-rapid speed, resulting, literally, in an upset.

Several other of this subject's dreams seem to reflect other facets of the situation of the resurgence of sexual impulses. In 5-4, he and a close friend have been sitting in a rocking chair, tipping it over. A little boy comes up and says they are supposed to go to the baseball diamond to play a game, and they comply. The rhythmic rocking element perhaps signifies the homoerotic tendencies of this developmental era (cf. the strong peer companionship element in 2-1 and 3-3), but may also convey the future, and more heterosexually-aimed, use to which reawakened erotic impulses may be put. Being called back to the rehearsal of a more adult role from what the subject describes as "messing around", signifies the call of an earlier self, before the dawning of frank homoeroticism, to return to the path toward masculine adulthood which undoubtedly seems more direct and uncomplicated to the child (e.g. to the other three boys in the study).

In 4-1 (he watches wool being cut off sheep's backs) and in 4-3 (a dog is pulling on his trouser-leg), there is a suggestion of a correlated renaissance of castration anxiety. In what both the subject and his mother describe as an incomprehensible dream (4-4), he and his adolescent sister are with a family not their own, singing together. It is possible that this dream expresses a precocious genital, non-maternal object choice: outside the confines of his present family, he might be able to "make beautiful music" with the nubile female with whom he is in most frequent contact.

Two other dream fragments were reported. Report 3-1, obtained the evening on which the subject had seen the film "The Magnificent Men and Their Flying Machines", was of the subject in an airplane. Report 5-2 was of a crowd, the occasion for their gathering together not recalled.

The less symbolic dreams of this subject are similar to many of those observed among the younger boys in this study. The vicarious rehearsal of big-guy, or masculine adult roles, appears to be the most common denominator of the diverse dreams of the four boys. Subject 4's more symbolic dreams, on the other hand, reflect facets of psychosexual development not yet equally apparent in the dreams of the younger boys. They are the reflection of a newly dawning era of psychosexual maturity, while the dreams of the young boys still vibrate with stirrings of earlier and simpler conceptions of such maturity.

Differences among the four subjects

Subjects 1 and 2 were selected for the relative bizarreness of their dreams in a previous study; subjects 3 and 4 for the relatively everyday qualities of their dreams in that same study (Foulkes *et al.*, 1966). In the present investigation, all subjects had both bizarre and everyday dreams. However, in the relative predominance of the two kinds of dreams, and, particularly, in the ability to recall dreams from REM sleep, the differences observed in the prior study were maintained over the course of the year separating the investigations.

Subjects 4 and 1 represent the two extremes in the areas of dream recall and dream content, with their own brothers more or less aligned with them. These differences between the two sets of brothers were correlated both with the subjects' waking ego controls and with the social class background of their families. Subjects 1 and 2 appeared relatively more spontaneous in their expression of emotion in their waking behaviour in the laboratory setting (although neither was, in absolute terms, given

to acting out his feelings), more fantasy-oriented in their wakeful behaviour (e.g. their addiction to comics), and came from a Catholic family outside the university community. Subjects 3 and 4 were somewhat emotionally constricted in their interaction in the laboratory (particularly subject 4, who appeared almost sullen on several evenings), more matter-of-fact in their approach to the world, and came from a Protestant family within the university community. In general, then, a different set of life styles was well reflected in the subjects' dreams, and, as was suggested by the statistical data of our prior study, the waking defences of denial or repression seem to be likely to carry over into REM mentation.

Subject 1's dreams, however, in some senses stood apart from those of his brother and from those of subjects 3 and 4: they appeared considerably more bizarre in nature and reflected much poorer control of anxiety. This subject's waking ego-controls also appeared to function rather poorly. Information collected from him during the morning association periods was often unreliable when measured against the responses of his brother and mother. Both during nocturnal interviews and during the morning association periods, he appeared to experience occasional difficulty in speaking, being forced to whisper or simply blocking altogether. These factors, in conjunction with the nature of his nocturnal mentation, would appear to support the data of a correlational study with adults (Foulkes and Rechtschaffen, 1964) in which it was found that vivid and bizarre dream content was most often reported by subjects with some indication of disturbance in waking personality functioning.

GENERAL DISCUSSION

As might have been anticipated, the dreams of each of the four boys in this study were found to be varied in character. Sometimes they were regressive, highly symbolic treatments of emotional and instinctual conflicts, and sometimes they were minimally disguised anticipations or vicarious rehearsals of future roles and activities. The significant frequency of dreams in this latter class is worthy of re-emphasis at this point, because dreams of the former sort have necessarily been given more attention in the preceding text than realistic, directly life-related dreams, for which there seemed to be little more to do than note their occurrence.

Dreaming, for the child as for the adult, is thinking in images during sleep, and the nature of this thought, for the child as for the adult, appears to be highly variable in form and significance, no less so than the thought which is carried on during wakefulness. This is not to say, however, that no general conclusions can be reached about dreaming among males during the childhood years. The data do suggest some important guideposts for understanding the child's dream life.

How does he "think" during REM sleep? Not predominantly in wish-fulfilment, at least not at an obvious or immediately verifiable level, although elements of wishful thinking are to be found in his sleeping, as well as his waking, cognition. Not in imagery which is always highly disguised or symbolic, although, as also seems true for adults, the closer he comes to conceiving things he fears (e.g. the bizarre dreams of all four subjects), the less straightforward are his dreams. The relative realism (e.g. the firecracker dream of subject 3) and lack of disguise (e.g. the predominance of everyday persons and situations found both in this study and in our earlier study) of the dreams of the male child are perhaps their most impressive

features. The case of subject 1, moreover, suggests that it is only when a child is overwhelmed by as yet unsolved emotional problems tracing back to past developmental crises that his dreams lose these qualities to any marked degree.

Of *what* does the child think during REM sleep? Here, as Hall (1959) has so ably shown for adults, the answer is "of himself". The conditions of REM sleep allow a kind of extended self-confrontation: one is freed from external surveillance and from the sort of cortical vigilance associated with defensive manoeuvres which inhibit such confrontation during wakefulness, yet the capacity for extended and intensive conceptualization is present, as it does not generally seem to be during non-REM sleep (Foulkes, 1966).

The particular aspects of the self entertained during REM sleep among young male children would seem to provide an impressive verification of Freud's theory of psychosexual development (although not necessarily of his theory of the nature or purpose of the dream). For some (e.g. subject 1), there is a lingering emotional attachment to mother, with concomitant fears of a castrating father and one's own irrepressible id. For others, particularly for those who have mastered the Oedipal situation reasonably well and who have achieved the characteristic equilibrium of the latency period, there is a strong identification with the father and fatherly activities, while the mother becomes more of a background figure. An active wish to become masculine-adult pervaded the dreams of these four subjects.

The dreams of the pre-adolescent, however, also suggest the value of the kinds of revisions Erikson (1963) and others have in recent years grafted upon orthodox Freudian theory, and of the kinds of concerns that have always been explicit in more socially-oriented analytic theories (Adler, 1958). Dream references to shifting aspects of contemporary interpersonal adjustment, for example, generally seem to overshadow those to the more fixed and developmentally primitive intrapsychic conflicts that are stressed in orthodox analytic theory (e.g. the paucity of content referring to the bodily anatomy of the classic pregenital erotogenic zones and stages, and the absence of a single dream in which there was a manifest portrayal of earlier years of life).

The fit with Erikson's discussion of socialization is particularly close. In his view, the child and pre-adolescent are engaged in expanding their horizons beyond the self, in manifesting initiative towards, and achieving mastery over, the ever-expanding world of people and things. It is in these stages that rivalry with siblings comes to focus upon their greater competence. It is here that some children (perhaps subject 1) are overwhelmed by guilt attaching to the externalized goals which their physical, mental, and emotional growth now seem to make accessible. It is also here that, although new goals involve other persons to a significant extent, they are often focused in terms of skill, achievement, and production in a world of things. The dream symbolization of masculine competence, for instance, in terms of mechanical mastery or physical skills (e.g. fishing), reveals a peculiarly pre-adolescent view of such competence. For the older pre-adolescent (e.g. subject 4), however, there are signs of a shift from stereotyped masculine-homosexual interests (sports, adventure) to a conceptualization of maleness which is becoming more complex and genital-heterosexual in character.

In either case, the dreams of the pre-adolescent consist, to a surprisingly large

extent, of content fitting under the rubric of "anticipatory socialization". He is looking forward to what he would like to be in terms of his physical, emotional, social, and psychosexual development, or, perhaps even more accurately, to what he would like to *do* in the world about him—and he is doing so with a generally realistic appraisal of the difficulties involved. While this finding appears more immediately comprehensible in neo-Freudian terms than in the context of Freud's metapsychology (e.g. pleasure principle) and his theory of the function of the dream (regressive wish-fulfilment), it is by no means incompatible with the essence of Freud's psychological thinking (Loevinger, 1966). In discussing children's play, for example, Freud regards an instinct for mastery as a necessary supplement to the pleasure principle (Freud, 1959), and much of the other argument of *Beyond the Pleasure Principle* moves in a direction wholly consistent with the nature of the pre-adolescent's dreams.

The results of the present study do not rule out the possibility that the dreams of pre-adolescent boys are also fulfilments of dynamically unconscious, earlier pregenital wishes. The verification of such a possibility would be difficult, if not impossible, to achieve outside the situation of intensive psychotherapy, and even there poses major problems. Whatever the ultimate merits of this hedonistic and regressive view of the function and nature of dreams, it is apparent, however, that the dreams of the pre-adolescent may also profitably be viewed in terms of attempts at anticipating and mastering contemporary problems which arise in the social world. In this respect, there appears to be a considerable continuity between the child's play and his dreams, both as to content and as to function.

At one level of analysis, then, that where interpretation is relatively straightforward in character, the dreams of the pre-adolescent provide a valuable source of insights into the contemporary developmental quandaries of his own era. Since more direct approaches to the study of the adjustment of the child and pre-adolescent are limited both in quantity and quality, the advent of electrophysiological techniques of dream detection, and the efficient and unbiased sampling of dreams they permit, may well give us a particularly indispensable vantage point for viewing development in the years before puberty.

SUMMARY

A qualitative dream-by-dream analysis was made of the reports of four pre-adolescent boys, each of whom was awakened four times a night from dreaming (rapid eye movement) sleep for six non-consecutive nights. No simple form of any of the classical dream theories seemed to adequately encompass the varied nature of the boys' dreams. Dreams that lent themselves to orthodox psychoanalytic-psychosexual interpretation were common, but so too were those that would justify conceiving the dream as a basically realistic attempt to master contemporary problems of social adjustment.

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THE SOCIAL WORKER'S CONTRIBUTION TO TRAINING IN CHILD PSYCHIATRY

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WITH the increasing focus in medical practice on the patient in his situation, social workers are in a position to play a significant role in medical training programmes, as this orientation has long been central to them. Edelson (1965), writing of the social worker's role in medical education, states, "the social worker can make material contributions to a residency training programme by demonstrating knowledge and skills that the physician himself will later need, both in direct contact with his patients and their families as well as with other health-involved agencies and individuals in the community" (pp. 81-86). Social workers are now carrying teaching assignments in many teaching schools, especially in the psychiatric training centres. Child psychiatry particularly lends itself to the effective use of social workers as teachers because of its recognized emphasis on the impact of environmental factors on the child, the increasing focus on family therapy, and the more active involvement in community psychiatry. Also the accustomed practice of a collaborative team relationship in child guidance facilitates learning from the field of social work, as it provides for first-hand demonstration of social work methods.

In any discussion of what social work can contribute to medical education, consideration should be given to a certain value system that this profession has developed which permeates all areas of its practice, and which has proven valid and effective in working with people. Some of the basic concepts which need to be emphasized are: (1) the intrinsic value and worth of the individual regardless of his circumstances; (2) the right to the fullest opportunity for self-development and emotional growth; (3) emphasis on utilization of strengths and assets rather than exclusive focus on pathology and liabilities of the personality; (4) acceptance of and belief in self-determination for all individuals. (Hollis, 1964.) In addition there are the more general values in social work practice such as (5) focus on the family, and (6) mobilizing community resources for helping individuals and groups. These values ought to be the basis to psychiatry, as both disciplines are concerned with bringing about a better adjustment internally as well as externally, for the person under treatment. Adoption of these concepts tends to develop feelings and attitudes which promote responsiveness in the person being helped, and therefore to establish sound treatment relationships. There is an impression, however, that insufficient emphasis is given to this value system in the training of child psychiatry residents. This was particularly noted in problems which arose in dealing with relatives and collateral contacts. This is probably due to the traditional medical emphasis on

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the patient and his illness. Social workers in a teaching relationship with residents could do much to emphasize this value orientation.

The increasing demand on social work that a teaching role imposes, underscores the importance of devising both methods of teaching and defining specific areas in which to teach (Bartlett, 1964). In the National Association of Social Workers' Pamphlet (1961) on social work participation in medical education, the following statement is made: "there should be rigorous effort to identify the characteristic and particular contribution of the social worker and to formulate it so that it can be communicated effectively" (p. 50). It is believed that before there is any consideration of methods of teaching, an attempt should be made to elaborate concepts which are translatable and applicable to use by another discipline.

In support of this, the following observations are made from experience in teaching certain aspects of working with parents to child psychiatry residents in the child guidance clinic of a medical school. The author was assigned to work on a collaborative basis with six psychiatrists who were completing their residencies in child psychiatry. The plan was for them to treat the child while the author saw the parents. It was understood that this particular arrangement, in terms of the team conferences, would be focussed on extending their knowledge and skills in dealing with parents of children in treatment. Early in the progress of this collaboration, it became clear that there were certain phenomena related to good practice, common to both social work and psychiatry, in which there was evidence of difficulty. These are listed below. A few of the illustrative situations are infrequent, but because they are significant in revealing gaps in experience and training they are included. Such incidents seemed to be due to lack of knowledge rather than any particular intra-psychic problems of the residents, though this possibility cannot be totally disregarded.

I. *Treatment management.* This term refers to mechanics of treatment, such as (1) the division of responsibility and joint planning by the team; (2) whether the mode of treatment is to be family therapy, individual therapy, or some combination of the two; (3) when parent conferences are to be held; (4) contacting collateral resources with consideration of the repercussions on parents; (5) preparing parents and children adequately for such things as changing appointments, psychological testing, school references, etc.; (6) keeping patients waiting for appointments; (7) cutting across lines of communication, such as the resident having discussions with the parent without informing the social worker.

Treatment management is one area in which difficulties were most frequently noted. Similar problems can develop in the private practice of child psychiatry. It is suggested that these problems may be due to the traditional medical practice of focussing primarily on the patient—in this case the child—and not dealing with significant factors in the environment, except where they obviously intrude on his treatment.

Without any prior team discussion, a resident, accompanied by the child, interrupted the social worker in an interview with the parent, announcing a plan of conjoint appointments from this point on. The mother became quite upset and was totally immobilized by this move. In another instance, a resident arranged for a special appointment with the tutor of a child in treatment, without allowing for any preparatory discussion of this plan with the parents. They reacted negatively, because of

their concern over family secrets being revealed to the tutor. On several occasions, doctors allowed themselves to become involved in unplanned interchanges with the parents during which times certain arrangements were made, or information exchanged, without the knowledge of the team-mate. Such exchanges elicited subsequent acting-out behaviour on the part of the parents, as well as confusion and dilution of the parents' relationship with the social worker. Other sorts of treatment management problems were: keeping patients waiting 15 or 20 min for appointments, which made them annoyed with the doctor; delaying the customary parent conferences until parents had to press for them; sometimes moving ahead on plans for school conferences or psychological testing without allowing opportunity for school conferences or psychological testing without allowing opportunity for prior discussion with the parents. Residents were often surprised to learn that these reactions caused anxiety in parents or children.

II. *Sensitivity to parents reactions to the child's therapist.* Here again the focus on the child as the patient can promote certain oversights and insensitivities to parents' reactions. The child's therapist needs to understand what the child is doing to the parent as much as what the parent is doing to the child. Often, because of the resident's awareness, parents may react with various kinds of baffling behaviour which cannot be totally considered as "transference phenomena", but are due to the residents' behaviour and attitudes.

Some of the difficulties are: (1) stimulating competitive feelings that a parent may have towards the child's therapist, or contributing to the competition between the parents; (2) assuming an inappropriate authoritative approach; (3) being manipulated by parents; (4) over-identification with the child with consequent hostility to the parents; (5) unrealistic demands on parents without due consideration for the realities of their situation.

One of the residents tended to feed a mother's feelings of rivalry towards him by emphasizing to the mother the rapport between him and his daughter, and the extent to which the child was confiding in him. This emphasis intensified the mother's resistance to treatment. In another situation, the resident frequently made side arrangements with the father concerning the child, in a situation where there was an unusually severe and competitive marital relationship. The mother expressed much anger about this and at one point, because of it, actively sabotaged the child's treatment. There were several instances of residents becoming authoritative with parents, by giving them orders about their handling and disciplining of the child, or instructing them as to what they should or should not do about the child's school. These instructions occasionally promoted hostile acting out on the part of the parents. Several of the doctors, particularly at the beginning of their residency, tended to over-identify with the child against the parents, so that some parents expressed feelings of being rejected by them. There were instances where the child used the authority of the doctor for being verbally abusive to the parents. Occasionally residents would make unrealistic demands on parents for appointment hours at times which were in conflict with unalterable working schedules, or at a time when it was impossible to obtain a baby-sitter for other young children in the family.

III. *Respect for parents' rights in their parental role.* This area takes into account that ultimate decisions about the child do rest with parents and must be respected. Decisions as to the beginning and ending treatment, school plans, changes in the family situation—which may not always be in the best interests of the child's treatment, but which the parents do make—are examples of parental prerogatives.

One child's therapist was adamant about continuing the treatment in spite of unavailing attempts to overcome the parents' resistance to do so. In one case, the doctor moved ahead with arrangements for his adolescent patient to participate in a Junior Nurse Aide programme without allowing for discussion with the parents who had to drive the child in from a neighbouring town.

IV. *Community relationships.* Patients do not live in a vacuum, which is especially true in the practice of child psychiatry. The child participates in and is affected by the life surrounding it, educationally and recreationally, and is influenced by the forces affecting the life of its family in the community. Hollis (1964) notes that there are certain problems (such as death, illness, etc.) beyond the individual's control or ability to modify at the time, that do require outside help. She also makes the point that the major part of an individual's discomfort can be due to pressures in the environment, and relief from them can result in more comfortable functioning.

Effective use of community resources has long been an area of special competence of the social worker. This specialized knowledge can and should be taught to the resident in child psychiatry, since in private practice he will have many occasions to use it. If he can learn to do so effectively and creatively it can be a powerful adjunct to a child's treatment.

Important concepts to learn in the use of community resources are (1) respect for other professional persons; (2) knowledge and use of individual community facilities, with consideration of their scope and limitations for treatment; (3) that community relationships encompass various kinds of contacts and conferences with community agencies and the discriminative sharing of information, as well as realistic planning; (4) and, of utmost importance, communication about a case in understandable terms.

Occasionally a resident gave too much information in a conference in violation of confidentiality, such as revealing unnecessary details about the parents' marital difficulties. At times, there was the problem of not sharing enough, by withholding diagnostic information when it was needed in order to explain a child's disturbed behaviour in school. There were certain instances of the residents having unrealistic expectations of agencies, such as expecting prompt placement of a child with immediate financing by an agency. In another situation the resident pressed for a crowded, rural high school to set up a daily tutoring arrangement for a child when this was not possible. Some reluctance to become involved with other agencies, such as the school or the welfare, was noted in the beginning of the training programme, based on the expressed feeling that this would not be particularly helpful. Initially, in first contacts with outside resources, there was a tendency to use psychiatric terms, talk down to the people at conferences. This may have been related to the resident's need to impress others with his knowledge and authority, or a real anxiety and discomfort in being involved with non-medical personnel. The presence and activities of the social worker in such instances seemed helpful in relieving the tension, and usually the next conference went off more smoothly.

V. *Parent therapy.* An interest in the parents as people with their individual dynamics and neurotic problems is central to the understanding of a disturbed parent-child relationship. This is the area most involved with the value system of social work and its knowledge of human interaction and family relationships. There is always the ebb and flow of emotional currents surrounding and affecting the child patient. The resident cannot know to the fullest extent what the child is like to live with, how withdrawn he is or how hostile and provocative, whether his behaviour publicly embarrasses the parents, or how much strain and conflict is entailed by caring for him (Hollis, 1964). It is especially important that the social worker evaluate and reveal these facts in collaboration with the child's therapist, so that the resident may better understand the meaning of the behaviour and man-ouvre of the child in the play interviews. This approach subscribes to the concept

that there are identifiable core problems in the parent-child relationship which require working on with the child, as well as with the parents.

One parent became exceedingly upset when the doctor criticized the way her little girl was dressed. This was a woman whose central problem was one of guilt and inadequacy both about her parental role and her femininity. In another case, unnecessary hostility was generated with a paranoid Negro mother, who had strong feelings about racial discrimination, when, in the waiting room, the doctor openly discussed with her and a white mother the exchange of appointment times. This incident resulted in the Negro mother sabotaging the child's treatment for a long period of time. In another case, progress in treatment was impaired because of the doctor's difficulty in seeing that much of an adolescent's antisocial behaviour was due to his struggle for masculine identification because of his negative relationship with a latent-homosexual father. There were several examples of doctors encouraging perfectionistic parents to tutor children with learning difficulties.

The impression was that many of the described situations were due to confusion, or lack of awareness of parent's reactions. This seemed due to the psychiatric orientation of treatment with adult patients seeking direct help for themselves, rather than as parents of a disturbed child. The residents were usually responsive in team meetings when such instances were called to their attention. Some frankly expressed surprise in learning of parents' reactions to some of their behaviour.

In conclusion certain points should be emphasized: that *Treatment management, Sensitivity to parents' reactions to the child's therapist, Respect for parents' rights in their parental role, Community relationships* and *Parent therapy* are areas in which social worker has much to contribute to the training of residents in child psychiatry. As a result of intensive focus with residents on these areas, their successes in child therapy increased. Several expressed satisfaction over the progress their cases made.

The collaborative team affords a logical situation in which such teaching can be done. It has the advantage of providing an immediate and ongoing experience of learning about parent-child relationships, through regularly scheduled team conferences which bring to life the theoretical teaching derived from other sources. It provides demonstrations of parent-child interaction, as well as observation of techniques of working with parents through conjoint interviews and parent conferences. Also, a useful by-product of the collaborative team approach is that it often brings to light difficulties the resident may be having with the case which escape the attention of his psychiatric supervisor.

Some things which psychiatric social workers in administrative positions might press for are: (1) that there be more intensive focus in psychiatric supervision on work with parents; (2) that there be more direct and free communication between social workers in a teaching role with a resident's supervisor, on a regularly scheduled basis, which is not always the case in a child guidance clinic; (3) that more opportunities be provided for child psychiatry residents to treat the parents utilizing social work supervision, and/or consultation; (4) that there be more conjoint interviews with social workers to observe and experience at first hand, techniques and skills of treating the parent-child relationship; (5) having social workers demonstrate work with parents and whole families in screen interviews as well as doing some didactic teaching in seminars and meetings. Finally, and of particular importance, (6) would be to have social workers actively participate with other disciplines in the planning and carrying out of training conferences and preliminary orientation programmes for residents.

SUMMARY

The potential contribution of social workers to the training of child psychiatrists is described, based on an experience of working with six child psychiatry residents on a collaborative basis in a child guidance clinic of a medical school. The traditional value system of social work and its importance for psychiatry is emphasized in utilizing social workers in a teaching capacity. Five major areas appropriate for such teaching are defined with illustrative material. Specific suggestions are made, which it is believed result in more effective utilization of social workers in such a training programme.

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PSYCHIATRIC DISORDER IN THE CHILDREN OF WEST INDIAN IMMIGRANTS

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FROM the early nineteen-fifties until the passing in 1962 of legislation limiting their entry, an increasing number of immigrants came to England from the West Indies. They settled in particular areas, so that throughout the country a number of child guidance clinics obtained special experience in the nature of the problems that their children presented. Crawford (1966) has described a limited series of disturbed children of West Indian, Asian, and half-caste parentage, and compared them with matched controls, but apart from this no systematic descriptions are available.

Yet the study of the development of psychiatric disorder in immigrant children offers an opportunity to consider issues of great general interest in child psychiatry. The children undergo separation experiences of a quite outstanding variety, they may be subjected to child-rearing practices which are alien to the culture in which their parents have settled, and their school life may be vastly different from anything they have previously experienced. In fact, the multiplicity of stressful factors often makes it difficult to identify those which have been of particular importance in the development of psychiatric disturbances.

Comparing disturbed immigrant children with non-disturbed, particularly perhaps their non-disturbed sibs, should help to disentangle those factors which are of frequent aetiological importance. As a preliminary, however, it was thought worthwhile to compare retrospectively a group of disturbed West Indian children with a series of disturbed "white" children, both of whose parents were born in the United Kingdom. The control group therefore consisted of children who, whatever other problem they may have had, did *not* share with the West Indian children difficulties relating to immigration, colour prejudice or discrimination. This paper represents the findings resulting from such a comparison.

THE SAMPLE

The children of West Indian parentage who had attended the Brixton Child Guidance Clinic between January 1st, 1963, and December 31st, 1965, were identified by scrutinizing the records of all children seen between these dates. There proved to be fifty-five West Indian children in all, and these will be referred to as the *study* children. For each study child, a control child was obtained by taking the next child to attend the clinic of the same sex and of the same age (within 6 months), both of whose parents had been born in the United Kingdom. When no such child attended in the same year the child with these characteristics who had attended most recently before the study child was selected as control. In this way it was possible

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to match all the study children for age and sex. (Mean ages were 9 years and 6 months for both study and control girls, and 9 years and 1 month for study and control boys.) The case records of the control children were not examined until after they had been selected.

METHOD

At the Brixton Child Guidance Clinic the case history is recorded systematically along the lines laid down in The Maudsley Hospital Children's Department Case History Sheet (1955). Information was in all cases obtained from a member of the family, usually the mother, and in all cases except one where the child was too young to attend school, a school report was obtained. All but one of the study children and two of the control children were given an intelligence test, either the Stanford-Binet (1960) or the W.S.I.C. (1949), and forty-seven of the study children and forty-eight of the control children took a reading test, usually the Schonell R.1 (1956).

Information about the current social circumstances and the first five years of the child's life were abstracted in a form suitable for coding. Two main measures of the continuity of parental care were considered, using a modification of the scales described by Dennehy (1966a). Firstly, the number of breaks in paternal or maternal care was noted. A break was considered to have occurred if the child was separated for at least 1 month from a parental figure with whom he had been living for at least 3 months. Breaks produced by virtue of hospital admission (either of child or parents) were not included unless the parent and child were in contact less frequently than once a week. Secondly, the age of the child at the first separation of a month or more (if any occurred), from either the natural mother or the natural father was recorded.

After consideration of the history, school report and mental state, eighteen symptoms were individually rated as absent, doubtfully present, present in mild, moderate, or severe form. If a symptom was not mentioned it was counted as absent. Then, using the classification described by Rutter (1965), a primary diagnosis was made together with a rating of overall severity of psychiatric disorder.

Various other social and family data were systematically noted. These included the number of children under 15 living in the household, the ordinal position of the child, the number of children born to the natural mother, and, in the case of the study children born abroad, his age on first arrival in this country.

RESULTS

Twenty-nine West Indian boys and twenty-six West Indian girls were referred to the Clinic during these 3 years. The total number of children attending the Clinic during this period was 577 (made up of 403 boys and 174 girls), so the West Indians represent a little less than one-tenth (9.5 per cent) of the total numbers. The sex incidence is quite unlike that of the rest of the Clinic population, however, where boys outnumber girls by about two and a half to one. ($\chi^2 = 8.46$ *df.* = 1. $P = < 0.01$.) The age distribution of the West Indian (study) children was also somewhat different from that of the rest of the Clinic population (Table 1)—the study children containing a somewhat, but not significantly, higher proportion of younger children.

The sex difference cannot however be attributed to the age differences as the proportion of boys and girls attending the Clinic are very similar in both older and younger age groups.

TABLE 1. AGE OF WEST INDIAN CHILDREN COMPARED WITH REST OF CLINIC POPULATION IN PERCENTAGES FOR GROUPED AGES

Age	N	0-4.11	5.0-7.11	8.0-10.11	11.0-13.11	14.0+
W. Indian boys	29	6.9	31.0	34.5	24.1	3.4
Other boys	374	4.8	19.8	32.6	30.2	12.6
W. Indian girls	26	0.0	34.6	38.5	23.1	3.8
Other girls	148	7.4	18.2	28.4	34.5	11.5

Age difference W. Indian boys vs. other boys: N.S.

Age difference W. Indian girls vs. other girls: N.S.

Current social status

In both groups the parents were mainly skilled or semi-skilled manual workers, though the middle classes were particularly under-represented in the study group, and the semi-skilled occupations correspondingly over-represented, though not significantly so (Table 2).

TABLE 2. SOCIAL CLASS DISTRIBUTION OF STUDY AND CONTROL GROUPS

Registrar general classification (1960) social class	I and II	III (non-manual)	III (manual)	IV and V
Study children	4		31	20
Control children	10		23	12

Comparing study children with control children
 $\chi^2 = 4.66$, $df. = 2$, $P < 0.10 > 0.05$.

TABLE 3. MEAN SIZE OF SIBSHIP OF STUDY AND CONTROL CHILDREN

	Study boys	Control boys	Study girls	Control girls
No. of children born to natural mother	3.5	3.1	4.0	3.5
No. of children under 15 in household	3.5	2.9	3.3	3.2

Differences in mean sizes of sibship study boys vs. control boys, and study girls vs. control girls: N.S.

Possibly linked to these social class differences there was a slight but not significant tendency for somewhat larger families (Table 3). This tendency is evident whether a social criterion (number of children below the ages of 15 living in the household) is taken, or a biological criterion (number of children born to the natural mother of the child). These figures do not adequately reflect the fact that many West Indian

families share houses built for single family units, so that opportunity often exists for their children to mix particularly freely with other children within their own homes.

As might be expected with a group of problem children, a considerable number were no longer living with their natural parents. The study girls did not differ from the control girls in this respect, and although rather more study boys than control boys were not living with their two natural parents, the difference is not statistically significant.

TABLE 4. DOMESTIC CIRCUMSTANCES OF CHILD ON REFERRAL

Living with—	Study boys	Control boys	Study girls	Control girls
	(29)	(29)	(26)	(26)
Both natural parents	14	21	19	17
Natural mother only	5	3	3	5
Natural mother and father substitute	7	1	3	2
Natural father and mother substitute		2	1	1
Other	3	2	0	1

Control boys *vs.* study boys living with both natural parents: $\chi^2 = 2.8$, *df.* = 1, $P < 0.10 > 0.05$.

THE FIRST FIVE YEARS

Differences between control and study groups in terms of *current* social status may not be marked, but when one looks at the first five years of the children's lives the picture changes considerably.

TABLE 5. BREAKS IN MATERNAL CARE IN CHILD'S LIFE

No. of breaks	Study boys	Control boys	Study girls	Control girls
0	13	19	7	19
1	7	7	8	4
2	8	3	10	3
3+	0	0	1	0
Not known	1	0	0	0

Control boys *vs.* study boys with no breaks in maternal care: $\chi^2 = 2.50$, *df.* = 1, N.S.

Control girls *vs.* study girls with no breaks in maternal care: $\chi^2 = 11.08$, *df.* = 1, $P < 0.01$.

Study boys *vs.* study girls with no breaks in maternal care: $\chi^2 = 1.96$, *df.* = 1, N.S.

TABLE 6. BREAKS IN PATERNAL CARE IN CHILD'S LIFE

No. of breaks	Study boys	Control boys	Study girls	Control girls
0	8	16	5	15
1	17	9	15	9
2	3	3	4	0
3	0	0	1	2
Not known	1	1	1	0

Control boys *vs.* study boys with no breaks in parental care $\chi^2 = 4.54$, *df.* = 1, $P < 0.05$

Control girls *vs.* study girls with no breaks in parental care $\chi^2 = 8.12$, *df.* = 1, $P < 0.01$

TABLE 7. AGE AT FIRST SEPARATION FROM NATURAL MOTHER

Age in months	Study boys	Control boys	Study girls	Control girls
0-36	11	7	12	4
37-59	2	3	3	1
60+	2	2	4	2
Not applicable	14	17	8	19

No significant differences between study and control children or between study boys and study girls in the age at which separation occurred.

TABLE 8. AGE AT FIRST SEPARATION FROM NATURAL FATHER

Age in months	Study boys	Control boys	Study girls	Control girls
Absent before birth	10	0	8	0
0-36	9	7	10	6
37-59	0	1	1	2
60+	1	3	1	3
Not applicable	9	18	6	15

Control boys vs. study boys in absence of father in household at time of birth: $\chi^2 = 12.08$ *df.* = 1, $P < 0.01$

Control girls vs. study girls in absence of father in household at time of birth $\chi^2 = 7.24$ *df.* = 1, $P < 0.01$ (Yates correction applied).

Tables 5, 6, 7 and 8 reflect in different ways the pattern of emigration from the West Indies to this country, and the direct impact this has on the child-rearing of immigrant children who later develop behaviour problems. There are, unfortunately, no data of this kind available on immigrant children in general, so it is impossible to know how typical were the separation experiences of such children attending the Clinic. Thirty-three of the fifty-five immigrant children were born in the West Indies, and none of these was brought to this country with both natural parents. In nearly all cases the father came over first and was followed by his wife, the children joining their parents in ones and twos as material circumstances allowed. Mostly the children were left with the maternal grandmother who had often been partly or wholly responsible for their care before the parents emigrated. The majority of immigrant boys and girls had undergone such separation experiences.

Often just as traumatic, and always more directly relevant to the Clinic referral as the initial separation from one or both parents, is the second separation that is involved in leaving the parent substitute in the West Indies when the time comes to rejoin parents in this country. Tables 7 and 8 show that these children are left most frequently by their parents in the first 3 years of life. On arriving in this country, typically 5 or 6 years later, they had often denied recognition of their parents and made it clear that their primary attachment was to the substitute parent in the West Indies. It was often difficult to determine whether this denial of recognition had been produced as a result of repression of conflictful material or whether the passage of a long period of time could be regarded as sufficient to answer for the apparent amnesia. In some cases the child's failure to recognize his parents seemed to be an expression of hostility to them either for having abandoned him or for having taken

him away from his parent substitute. The parents have of course not forgotten their attachment to their children, and there is sometimes disappointment, anger, and partial rejection, when the child fails to show the expected elation at seeing them again. To add a bitter coating to the pill, there have often been one or more new children born to the parents since their arrival in the United Kingdom, so that the boy or girl arriving has to contend with his own feelings of jealousy as well as his grief at separation from loved figures in the West Indies.

Clinic referral

Table 9 shows the agencies involved in referring the study and control group children. Most children in both groups are referred by the Divisional School Care Organiser. A somewhat, but not significantly, higher proportion of the control group were referred by general practitioners, but possibly this is a reflection of the

TABLE 9. REFERRAL AGENCIES OF STUDY AND CONTROL CHILDREN

	Study boys	Control boys	Study girls	Control girls
General Practitioner	3	6	1	2
Divisional school care organizer	21	17	21	18
Probation officer	1	3	3	0
Parent direct	0	1	0	1
Other (incl. school medical officer)	4	2	1	5

There are no significant differences between study boys and control boys or study girls and control girls in the numbers referred by the Divisional School Care Organizer.

TABLE 10. SYMPTOMS SCORED AS DEFINITELY PRESENT (MODERATE OR SEVERE)

	Study boys	Control boys	Study girls	Control girls
Anxiety	7	14	8	18†
Depression	8	11	18	18
Specific fears excl. school phobia	0	2	3	5
School phobia	0	1	0	3
Enuresis	13	6	6	9
Encopresis	4	1	1	2
Over-activity	3	6	1	1
Disobedience (home)	16	10	13	11
Disobedience (school)	17	5†	17	5†
Lying (home)	9	2*	10	4
Lying (school)	4	1	7	2
Stealing (home)	10	3*	8	3
Stealing (school)	11	4*	8	2*
Destruction	8	3	5	3
Truancy	4	8	3	2
Fighting, bullying	17	14	13	11
Running away	8	1*	5	2
Other misbehaviour	0	1	2	1

Study boys compared with control boys and study girls with control girls for each symptom $df. = 1$ in all cases.

* Significant at 0.05 level † Significant at 0.01 level.

TABLE 11. PRIMARY DIAGNOSIS OF STUDY AND CONTROL CHILDREN

	Study boys	Control boys	Study girls	Control girls
Neurotic disorder	2	8	2	9
Antisocial disorder	18	12	17	9
Mixed antisocial/neurotic	3	3	4	4
Developmental disorder	4	2	0	3
Other	1	4	2	1
Inadequate information	1	0	0	0
Normal child	0	0	1	0

Study boys have significantly less neurotic disorder than control boys, and study girls significantly less neurotic disorders and more antisocial disorder than control girls. $df. = 1$ $P < 0.05$ in both cases.

tendency for West Indian families not to consult their family doctors for emotional problems, rather than the absence of such problems. However, Kiev (1965) has shown this is not to be the case with respect to adult psychiatric illness.

Although both groups of boys are predominantly antisocial this tendency is more marked in the immigrant children (Table 10 and 11). This difference is more marked in the case of the two groups of girls. The study girls showed almost as much antisocial behaviour as the study boys, whereas the control girls were distinctly less antisocial and more neurotic than the control boys. The relative excess of antisocial behaviour in the study girls is unlikely to have been produced by a referral bias as the two groups of girls were referred from similar agencies. If only girls referred by the Divisional School Care Organizer are considered, the excess of antisocial behaviour in study girls remained. It might be that school agencies differentially selected antisocial West Indian girls for clinic referral, but if this were the case one would have expected the behaviour disorders thus exhibited to be less severe, and this was not the case.

Of the neurotic symptoms (Table 10), anxiety, but not depression, is found significantly less frequently in the study children. The validity of this rather surprising finding received some support from the relative rarity of specific fears and school phobia in the immigrant children. It is our clinical impression too that autonomic symptoms and signs of anxiety, and their frequent psychic concomitants of worrying and mental tension, are less often found in the immigrant children referred than in the rest of the clinic population. The unhappiness which the children suffer (and a high proportion of the antisocial as well as the neurotic children showed some degree of depression) is usually unaccompanied by agitation and restlessness. Most of the other significant differences between the groups as far as symptoms are concerned (lying, stealing, disobedience at school), reflect the higher rate of antisocial behaviour amongst the study group of children. Interestingly, there is a significantly higher number of study boys who have run away from home. Many immigrant children have fantasies of jumping on a boat or catching a plane to return to their country of origin, and the running away that occurs sometimes seems to be a symbolic attempt to act this out in reality.

Intelligence and educational attainments

The children were either tested with the Stanford-Binet (thirty study children

TABLE 12. MEAN I.Q. OF STUDY AND CONTROL CHILDREN

Study boys	97.6	S.D.	14.1	Study girls	81.3	S.D.	15.66
Control boys	101.7	S.D.	9.9	Control girls	96.7	S.D.	13.36

Study boys vs. control boys: $t = 1.24$, $df. = 55$ *P.* N.S.

Study girls vs. control girls: $t = 3.95$ $df. = 50$ $P < 0.01$

Study boys vs. study girls: $t = 4.01$ $df. = 52$ $P < 0.01$.

TABLE 13. MEAN AGE, I.Q. AND READING AGE OF FIVE GIRLS AND THIRTEEN BOYS MATCHED FOR I.Q. AND CHRONOLOGICAL AGE

	Mean chronological age (months)	I.Q.	Reading age (months)
Study children (18)	111.3	94.9	81.6
Control children (18)	112.9	97.4	84.1

Reading age, study vs. control children: N.S.

and twenty-eight control children with equal numbers of boys and girls in each case) or with the W.I.S.C. (twenty-four children—thirteen boys and eleven girls, and twenty-five control children—thirteen boys and twelve girls). For purposes of comparison the W.I.S.C. full-scale scores were converted to a Stanford-Binet equivalent using the table provided by Weider, Noller and Schramm (1951). Although there is no significant difference between the boys in the two groups, the study girls are markedly and significantly duller than their controls (Table 12). In view of the cultural factors that modify results obtained with both these tests of intelligence, the validity of comparisons such as these may be questioned, but it is difficult to see why these factors should differentially affect the performance of the immigrant girls. 30.8 per cent of the study girls were born in this country compared with 48.3 per cent of the boys, but the mean I.Q. of the eight girls born in this country was 83.3 which is little different from the mean I.Q. of the eighteen girls born in the West Indies (80.4).

The reading attainment of the children was tested in most cases using the Schonell R.I. (Graded reading vocabulary test). It was possible to match eighteen of the study children (five girls and thirteen boys) with eighteen control children for sex, I.Q. to within 10 points, as well as age to within 6 months. It will be remembered that the initial matching of study children with controls was made in terms of age and sex, but not I.Q.

There is a marked degree of reading retardation in both study and control groups (Table 13)—a finding consistent with other evidence (Rutter *et al.*, 1966) that antisocial children show a high rate of severe backwardness in reading. Although the children in each group are only slightly below average in intelligence, their mean reading age is in the case of the study children nearly 30 months behind their chronological age, and over 27 months among the control children. The difference between the control and study groups is not significant.

DISCUSSION

Certain limitations inherent in a comparison of cases referred to clinics must first be considered. The data presented do not allow any conclusions to be drawn about the relative prevalence of psychiatric disorder in the immigrant and indigenous populations in the area. Nor is there any justification on the basis of this study for conclusions about the frequency of particular types of disorder in the populations in question. Further, the importance of particular factors occurring in the clinic population cannot be assessed unless their frequency in the general population is known. For example, the West Indian children suffered numerous separations from their parents in the first two years of life, but until the relative frequency of these events in the early lives of non-disturbed West Indian children is known, no aetiological importance can be attached to this finding. Comparisons between the West Indian and other immigrant groups, such as the Asian and African immigrant populations, with different patterns of family life, might well be illuminating in this respect.

However in the past, clinic studies of this type have not been altogether misleading. Total population studies (e.g. Rutter and Graham, 1966) have confirmed the sex differences in prevalence and diagnostic category that numerous clinic studies had previously reported. This is not too surprising where the clinic receives referrals mainly from one agency which applies uniform standards in deciding whether to refer a particular child to a clinic.

It is possible, therefore, that the findings reported in this paper have some general relevance, especially with regard to behaviour disorders as they are manifest in school. Rutter and Graham (1966) found that children disturbed in school were by no means always disturbed at home, and vice versa, so that it could be hazardous to generalize from the findings to conclusions about psychiatric disorders in general. For example, it is the impression of child psychiatrists working in a general hospital serving the same area that general practitioners tend to refer to them more neurotic than antisocial West Indian children (Dennehy 1966b).

The comparison between the West Indian children and other children referred to the Clinic was particularly interesting with regard to the two groups of girls. The fact that immigrant girls are referred to the Clinic more frequently than one might expect, and that they differ from other girls referred in their level of intelligence and behaviour patterns, suggests that there are aetiological factors here that are peculiar to the West Indian girls. What these might be is a matter of pure conjecture, but it is our impression that the role girls are expected to play in the U.K. differs more from the role expected of them in the West Indies than is the case with the boys. It may be that in the West Indies bolder and more aggressive behaviour is acceptable in a girl than is the case in the United Kingdom. This role difference may put particular strain on those girls who do not have the intellectual equipment necessary to achieve the flexibility of behaviour that is necessary to meet the different demands made by the two cultures.

The high rate of antisocial disorder, together with the relative absence of anxiety, might lead one to expect that a large number of psychopathic delinquent immigrant children were referred to the Clinic. Such an impression would be quite misleading. Of the children referred with antisocial behaviour, a considerable number were

suffering from neurotic symptoms of one sort or another, mainly depression. Further, the degree of reactivity to adverse circumstances in their environment made the concept of delinquency inappropriate in most cases.

Although a description of the early lives of the immigrant children makes clear the differences between their separation experiences and that of other children attending the Clinic, their lives differed in many other ways that it has not been possible to examine systematically. It is our impression that they were often more restricted in their lives than other children in the area. They are less often allowed out to play, and less often allowed to bring other children home. They are more regularly expected to carry responsibility for domestic chores and for looking after younger children. Baby-minding is a practice not, of course, confined to the immigrant group, but it does seem as though immigrant pre-school children are more often boarded out during the day to professional baby-minders, who, because of the numbers of children they look after, may not be able to give the children as much individual attention as they would wish. Finally, there is the question of colour prejudice and, much less often, colour discrimination, which many of the immigrant children attending the clinic put forward as one of the reasons for their difficulties in school. No attempt has been made to assess the importance of those factors, but this should not be taken to mean that we regard them lightly.

SUMMARY

The clinical characteristics of fifty-five children, born of West Indian parents, who had been referred to a Child Guidance Clinic over a period of three years, are described. The children are compared with fifty-five other children matched for age and sex.

Roughly equal numbers of West Indian boys and girls were referred, although there is a considerable preponderance of boys in the rest of the Clinic population. The two groups did not differ in social class or family size, nor was there a higher rate of *current* separation amongst the parents of the West Indian children. However, the West Indian children had more often suffered separations from parent figures in their early years. West Indian boys showed less neurotic disorder and West Indian girls more antisocial disorder than the controls. The West Indian girls were also of significantly lower measured intelligence than the controls. All groups showed a **severe degree of reading retardation.**

Caution is expressed about generalizing these findings to the population from which the children are drawn, but there is felt to be a clear cause for concern in the frequent and sometimes traumatic separations that the current immigration pattern imposes on West Indian family life.

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APPENDIX

*Illustrative case histories**Case 1. Antisocial disorder in an adolescent Jamaican girl.*

Arlene B., aged 13 years and 5 months, was referred by the School Medical Officer on account of unpredictable behaviour at school where she was disrupting the class. She found any kind of conformity in class a challenge, and would crawl on the floor making noises and provocative comments to attract attention—the attention given being a further challenge to uncontrolled behaviour when she would be rude, aggressive and 'throw wild tantrums'. At home her mother had few complaints about her, but said she was sometimes unhappy and cried.

She was born in a rural area outside Kingston, Jamaica. Her father emigrated to England when she was 6 weeks old, and her mother followed when she was 2. Arlene was left in the care of her maternal grandparents until 11 and then rejoined her parents in England. During her separation her parents had maintained only indirect contact with her via letters to the grandparents. The latter were fond of her and tried to delay her departure.

On arrival at London Airport she was claimed by her father, who took her home to meet the five brothers who had been born since she last met her parents. Both parents were working to pay off a mortgage and Arlene was expected to help with child-minding. She began to show infantile behaviour, even refusing to dress herself and comb her own hair.

On examination she talked freely of her hatred for her mother and wept bitterly. She wanted to go back to Jamaica where her grandparents had been kind to her. Her W.I.S.C. Full Scale I.Q. was 75 (Verbal Scale 82, Performance Scale 72), and her reading age (Vernon G.W.R. List 1963) was 12 years 9 months.

Arlene was seen regularly for supportive session over the following 4 months and there was considerable improvement in her behaviour both at home and school. Her attendance then lapsed, but in the subsequent 6 months there were no complaints from school about her.

Case 2. Depressive illness in a mother with culturally determined delusions affecting the child.

Blossom B., aged 6 years 0 months, was referred by a probation officer for a diagnostic opinion to discover whether she showed any psychiatric disturbance. Blossom had been taken to the local police station 2 months prior to her attendance, when her mother alleged that the child had been sexually assaulted by a man with whom Mrs. B. (who lived alone with her two children) had been friendly. Blossom was admitted to hospital for observation, but no evidence of assault or of venereal

disease was discovered. Subsequently she was placed in a Remand Home for 3 weeks following an appearance in a Juvenile Court on a charge of being in need of care and protection.

On examination the child appeared perfectly normal. Mrs. B. described how she had come over from Jamaica 8 years previously. She had separated from her husband some time ago and for the past 5 years she had lived alone with her two children forming occasional liaisons. For about a year she had been seeing a Mr. D. fairly regularly.

About 3-4 months before this episode Mrs. B. began to feel generally unwell and unhappy. She lost her appetite and a good deal of weight. She had been to see her doctor who had given her a tonic but this did not make her feel any better. She developed the idea that she was not improving because Mr. D. had put a spell on her. Whilst in Jamaica she had been involved in Obeah practices and now she believed that Mr. D. was using some kind of magical method to harm her. She then began to believe that he was also harming the children and suddenly she was sure that he had interfered sexually with Blossom. Her accusations made at the Police Station were based on this belief.

Happily, 2 months later, on her attendance at the Child Guidance Clinic Mrs. B.'s spirits and appetite had improved tremendously, and she realized that there were no grounds for her original belief.

No psychiatric supervision was undertaken although the child remained on a Probation Order. At follow-up a year later neither Mrs. B. nor the school had any complaints about Blossom.

Case 3. Henry A., aged 13 years 4 months, was referred by the D.S.C.O. because of persistent running away from home.

Henry had been brought up by both his parents in a rural district of Guyana until 3 years previously when he was 10. An older married sister of his, a Mrs. V., who had settled in this country, then wrote to his parents and asked if they would like to send a brother or a sister across to this country. Mrs. V. hoped very much that Henry's twin sister would be sent as she is a bright girl and would have been of help in minding Mrs. V.'s own young children.

When Henry arrived she was disappointed, particularly when he turned out to be of little help around the house. About a year ago he had started to run away from home whenever he had done something wrong. On three or four occasions he had stayed out all night. She and her husband, who was a Post Office engineer in regular employment, had tried telling him off and beating him with little effect.

On examination Henry was found to be an anxious, tense boy who frequently frowned and blinked his eyes. He still pined for Guyana and often cried when he thought of his twin sister. He said that he ran away when he just didn't feel like going back to his married sister's house. He would sit all night in a shed in the playground of his school on the occasions when he ran away. His W.I.S.C. Full Scale I.Q. was 83 (Verbal 90, Performance 78) and he was nearly 5 years retarded in reading.

He attended the Clinic sporadically to talk about his feelings of unhappiness and his yearning for Guyana. His episodes of running away gradually ceased although he remained a rather depressed boy a year later.

THE GENERALIZATION OF DEPENDENCY BEHAVIOUR FROM MOTHER TO STRANGER

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THE AIM of this study is to investigate the pattern of generalization gradients of various kinds of dependency behaviour for groups of young children who differ in their dependency habit-strength, and in the anxiety-provoking conditions under which they are observed. Our predictions are based on those principles of general learning theory which deal with the effect of habit-strength and motivation on the generalization gradient.

Stimulus generalization and the generalization of dependency

The phenomenon of stimulus generalization has been established and demonstrated with both conditioned and unconditioned behaviour in human subjects, rats, and monkeys with various stimulus dimensions. (Hovland, 1937a; Schlosberg and Solomon, 1943; Miller and Dollard, 1941.) Here, the attempt is made to establish the phenomenon with regard to a particular type of social behaviour (*viz.* dependency) in young children. The stimulus dimension in this case consists of different people, the conditioned stimulus being the main caretaker of the child (whom we assume to be also his primary attachment figure), and the test-stimuli being people other than the main caretaker.

The phenomenon of stimulus generalization produced the concept of 'generalization gradient' (Hull, 1952), which refers to the commonly observed decrease in response strength with increasing differences between the original stimulus (training S) and the subsequent stimuli (test S). The only point of agreement between studies investigating the shape of this generalization gradient is that a decrease occurs in response strength from training stimulus to test stimulus (Kimble, 1961).

Our predictions concerning the effect of motivation on the generalization gradient are derived from Miller's (1948) stimulus generalization theory; the predictions concerning the effect of habit-strength are derived from Hull (1952).

Motivation. Miller (1948) argues that "If the drive motivating the direct responses to the original stimulus is increased, the strength of all displaced responses will be increased". This implies that "If the strength of the drive motivating the direct response to the original stimulus is increased, it will be possible for increasingly dissimilar stimuli to elicit displaced responses", *i.e.* there will be an increased range of generalization. Hence, if anxiety can be considered as a general drive (Spence and Farber, 1954) then an increased anxiety level will increase the general drive level

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(D), which will increase the frequency of dependency behaviour not only to the main caretaker (CS) but also to other test-stimuli. In our case this implies that children observed under high-anxiety conditions will exhibit more dependency behaviour to a non-familiar woman (test-stimulus), as well as to their mothers (CS), than children observed under low-anxiety conditions.

Habit-strength. According to Hull (1952), there is a curvilinear relationship between the number of reinforced trials (which determines habit-strength) and the range (or amount) of generalization. Up to a certain point, an increase in number of reinforced trials will bring about an increase in the generalization range, but after that, it will enhance the discriminability of the situation and the range of generalization will decrease.

In so far as dependency is considered to be a habit-system (i.e. a set of responses which acquires its strength via reinforced trials), one would expect it to conform to Hull's theory.

The implication for this study is that children with a relatively strong dependency habit will exhibit more dependency behaviour to a non-familiar person, as well as to their mothers, than children with a relatively weak dependency habit. However, the children with an *extremely* strong dependency habit will show more dependency behaviour towards their mothers and *less* toward a non-familiar woman.

Dependency—definition and measurement

Dependency is defined operationally in our study as the sum of the frequency of the following behaviour: positive attention seeking, and seeking physical contact. This definition follows the tradition set by Sears *et al.* (1953) and with some modifications, by Gewirtz (1954), Beller (1955), Heathers (1955) and Hartup (1958).

Since various correlational studies indicate the possibility of having two 'clusters' or subgroups of dependency behaviour variables identified as 'mature' vs. 'immature' or as 'social insecurity' vs. 'assertive sociability' (Heathers, 1955; and Sears, 1963), within the one concept of dependency, and since dependency behaviour categories in this study include behaviour which belong to the two clusters, we might expect to find a similar grouping in our study. Thus we can determine whether the two subgroups are affected differently by the anxiety condition. Harlow (1958) reported an increase in the frequency of *clinging* in his monkeys in an anxiety provoking situation. Schachter (1959) reported that anxiety increased affiliative behaviour in young women. Schachter's measure of affiliation can be interpreted as proximity-seeking. In both his and Harlow's studies, the immature dependency behaviour was affected by anxiety.

In the light of these results and the argument above, the anxiety condition might be expected to have a greater effect on the dependency behaviours of proximity-seeking and the seeking of physical contact than on the behaviours described as seeking attention, approval, and help. That is, we expect that the proximity of an adult and the clinging to an adult are more effective in reducing anxiety than getting the adult's attention, approval and/or help.

HYPOTHESES

- (1) According to the generalization gradient principle we would expect the

frequency of dependency responses towards strangers to be lower than the frequency of dependency responses toward mothers. This reasoning assumes that the mother is the discriminative stimulus, in whose presence dependency behaviour is originally reinforced. We also assume that no special training is given that will reinforce generalization of dependency to strangers (not relatives).

(2) Considering that anxiety increases general drive level (Hull, 1943) and thus increases level of responsiveness in general, we would expect that the more anxiety arousing a situation is, the more dependency responses would be emitted, to mother and also to stranger. This expectation received some support in studies dealing with 'passive' dependency (shaping of behaviour by social reinforcement) (Walter 1960, a and b) and 'clinging' behaviour in monkeys (Harlow, 1958).

(3) Anxiety level is expected to have greater effect on behaviours such as seeking physical contact and being near than on behaviours such as seeking attention, approval and help.

(4) Children who are highly dependent on their mothers will exhibit more dependency behaviours towards strangers than children who are not so dependent on their mothers. Because of the practice effect on the generalization gradient (Hovland, 1937b), this result is *only* expected up to a certain level of dependency

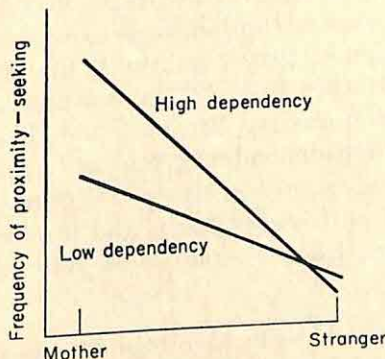
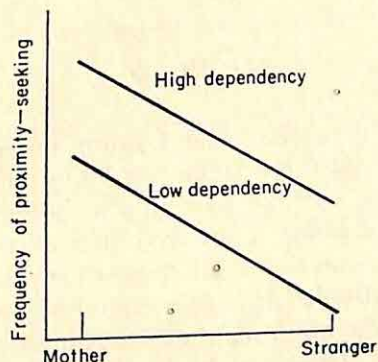


FIG. 1. A comparison of the generalization gradients of proximity-seeking under two levels of anxiety for two dependency levels (theoretical).

before overlearning takes place. After that point, the higher the dependency on mother the lower the dependency on strangers (Hull, 1952). Considering the particular sample and procedure of this study, it seems unlikely that the sample included children who were extremely dependent on their mothers.*

Thus the data cannot provide a proper test of the predictions concerning the upper range of dependency.

(5) Hypothesis (4) might be qualified with regard to the different dependency behaviour categories. It is likely that Miller's hypothesis will hold for the attention-seeking behaviour. The pattern of generalization may be different, however, for the proximity-seeking behaviour. These might have been reinforced exclusively by the mother, and might also have had some discrimination learning history ("you do not cling to someone you don't know").

Thus, while the low-dependent child would exhibit very little proximity-seeking to both the mother and the stranger, the high-dependent child might exhibit much more proximity-seeking to the mother and only very little toward the stranger. One would expect that the effectiveness of this discrimination would decrease under high anxiety conditions (Easterbrook, 1959) and thus under high anxiety, the pattern for proximity-seeking generalization would conform to Miller's hypothesis. (See Fig. 1.)

METHOD

Design

The study was carried out on sixty-four London nursery school girls, aged 3 : 6 to 4 : 6. Each girl was observed three times, for 30 min each session. Mothers gave permission for their children to take part in the investigation, and were always present for two of the three sessions. They were first observed with their mothers in the nursery school to assess their general dependency level. On the basis of this assessment the sample was divided into four matched groups. Once a given set of four children was matched, the assignment of individuals to experimental groups was randomized. The other two sessions took place in an experimental room, near the nursery school. Each girl was observed in this room once with her mother and once with a non-familiar woman. Half the girls were observed the first time with their mothers, and the other half were observed with the non-familiar woman (stranger). Half of each group was observed under low-anxiety conditions while the other half was observed under high-anxiety conditions, thus forming four experimental groups: (1) Low-anxiety, Mother first, (2) Low-anxiety, Stranger first, (3) High-anxiety, Mother first, (4) High-anxiety, Stranger first. The total sample of sixty-four girls was also divided into a high-dependent group and a low-dependent group, on the basis of their total dependency scores in the initial observation with their mothers, thus allowing for a comparison between high- and low-dependent children in their reactions to the various experimental conditions. The overall design is shown in Table 1.

*(a) An extremely dependent child would have great difficulties in adjusting to nursery school—we selected only those who were fairly well adjusted.

(b) The child had to agree to leave the nursery school with a relatively unfamiliar woman to go to an unfamiliar place—we assume that no extremely dependent child would have agreed to come.

PROCEDURE

(a) *Initial observation*

Experimenter (E) met the mother (M) and child (C) in a small room in the nursery school, close to the playrooms and familiar to the children. E was present with M and C during the observation. In the room there was a collection of toys.

TABLE 1. SUMMARY OF EXPERIMENTAL DESIGN

	Session	High-anxiety condition		Low-anxiety condition	
High-dependent children	1	Mother	Stranger	Mother	Stranger
	2	Stranger (N = 8)	Mother (N = 8)	Stranger (N = 8)	Mother (N = 8)
Low-dependent children	1	Mother	Stranger	Mother	Stranger
	2	Stranger (N = 8)	Mother (N = 8)	Stranger (N = 8)	Mother (N = 8)

E called the attention of C to the toys. After about 12 min, M was given a questionnaire about C and the family background. The observation was terminated after 30 min. M was told that there might be one more session.

(b) *Experimental observation*

The experimental room was an observation room with a one-way screen, which contained some furniture and toys (Fig. 2). E met C either with her M or alone. E escorted M and C to the observation room, excused herself (to repair some toys) and came in again at the end of the session to take C back to the nursery school.

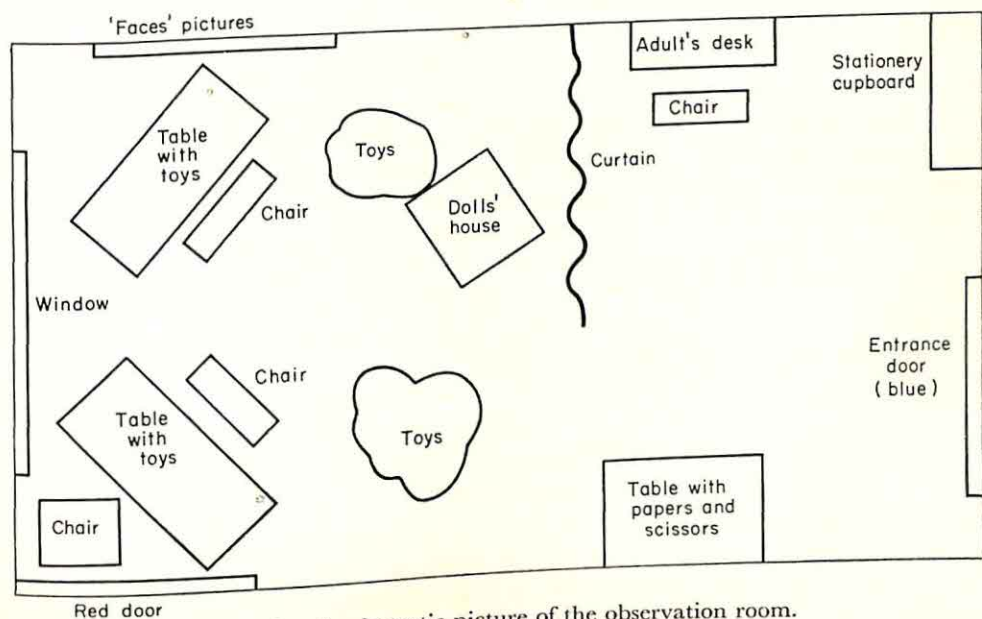


FIG. 2. A schematic picture of the observation room.

While C was in the room with M or the stranger (St), E observed and scored the behaviour of C from the adjacent room. A microphone was placed in the observation room, above the adult's desk, which enabled everything to be heard. Besides recording C's behaviour, E also controlled a tape recorder which played a pre-recorded sound track, the content of which depended on which anxiety group C was assigned to.

(c) *Dependent variables*

Definition. Our dependent variable is dependency behaviour, which is defined operationally as the sum of the frequencies of performing each of the following six behaviour categories:

Seeking positive attention (PA). Behaviour which is not negative in nature which appears to be employed to get the attention of an adult, e.g. "Look", "You know what?".*

Seeking negative attention (Na). Behaviour to secure the attention of the adult which is negative in nature; i.e. it includes disruption, aggression, opposition and resistance to rules by ignoring, refusing, or doing the opposite; e.g. C hits adult to get attention.

Seeking praise and approval (APP). Behaviour, mostly verbal, which is supposed to elicit an approving response (not necessarily verbal) from the adult; e.g. "Look, I did it all by myself", "Pretty, isn't it?".

Seeking help (H). Behaviour to get adult's help; e.g. "You show me", while presenting adult with the toy that needs fixing.

Seeking proximity (P). C tries to keep the adult near her without really touching her; e.g. she plays on the floor near the adult. Glances at the adult while playing.

Physical contact (PC). C maintains the proximity of the adult by actually touching her, e.g. sitting on lap, holding hand, dress, sleeve, etc., clinging.

Method of scoring

The observer was equipped with a booklet and a stop-watch. For each C there was one page divided into 120 squares. The symbol for any of these categories of behaviour which occurred in a 15-sec period was entered on each square.

The obtained score. The score obtained was not a pure frequency score, but rather the number of 15-sec intervals in which a behaviour occurred. Most scorings consisted of short responses, lasting for less than 15 sec, and hence the score can be considered a frequency score in the main. However, for the categories P and PC, this is not the case. A child might come in holding his mother's skirt and not change this position for the whole half-hour. His PC score would be 120; a child who held the hand of the adult for one continuous minute would have a PC score of 4, the same as a child who on four separate occasions leaned against his mother.

Observer's reliability. The observations for determining the reliability of the dependency categories scores were conducted by two observers at a time. The scores are based on sixteen children, each of whom was observed for 30 min with the mother in the experimental room. Product-moment correlations were calculated for the two observers' scores (Table 2). They reach a satisfactory level.

INDEPENDENT VARIABLES

Anxiety. Two levels of anxiety were manipulated experimentally. In the *low-anxiety* condition the child played in the observation room with the various toys, a picture of smiling faces was hanging near the toys. The only stimulation from out-

*Our categories do not include 'Question' or 'Asking for information', e.g. "What is this man singing there?"

TABLE 2. INTER-OBSERVER RELIABILITY OF DEPENDENCY CATEGORIES SCORES OF SIXTEEN SUBJECTS

Category	Frequency O_1	Frequency O_2	Correlations†
Positive attention (PA)	307	326	0.992
Negative attention (NA)§	0	0	—
Approval (APP)	4	4	1.000
Help (H)	15	15	1.000
Attention-seeking‡	326	345	0.991
Proximity (P)	148	160	0.985
Physical contact (PC)	50	51	0.989
Proximity-seeking*	198	211	0.990

†Based on individual subjects' scores.

‡Attention-seeking = The sum of PA, NA, APP, and H.

*Proximity-seeking = The sum of P and PC.

side was the sound of a gramophone in an adjacent room, which played first lines of various children's songs at regular intervals of 3 min. In the *high-anxiety* condition the child, on entering the room, faced a slow-burning alcohol lamp standing on a stainless steel tray. Next to it was a pair of scissors, a white paper tissue, and a pencil. The pictures of the smiling faces were replaced with a group of sad faces. The sound-track heard from the adjacent room was made up of the following sounds: a loud banging on a metal object, a child crying, and a high-pitched shriek. Each sound continued for about 20 sec. The sounds came on at regular 3 min intervals. The tray with the burning lamp stood on a chair next to the red door leading to the room from which the sounds came. After about 12 min, and following a loud continuous shriek, the red door opened very slowly (providing that the child looked in that direction) and a hand in an arm-length black glove reaching in slowly, put out the lamp and withdrew, closing the door once more. Within two or three minutes a crying sound was heard.

Effectiveness of the anxiety condition. An effort was made in this experiment to induce anxiety in a way which was not contaminated by any 'social deprivation' or 'rejection' (see Walters and Ray, 1962). What our anxiety condition tried to induce was some kind of vague apprehension. We tried to make the child wonder "Who knows what is going on behind that red door . . . it does not sound very pleasant . . . it is obviously very strange . . . is it coming to get me?" From observing the girls and their verbal comments this goal was clearly achieved.

Stimulus person

As the design indicated, every C (in both the low and high anxiety groups) was observed once with her M and once with a non-familiar woman who was introduced to the C as "This is Paddy: She is the teacher in our little nursery school". We shall refer to both M and St (the non-familiar woman) as 'stimulus person'.

§The lack of negative attention-seeking can be tentatively explained by the fact that the sample consisted mostly of English girls who probably, already by the age of four, are trained *not* to seek attention by means of negative (mostly aggressive) behaviour.

(1) *Mother*. E met M and C in the nursery school and led them to the observation room. E was friendly to both. On entering the room E said to M: "This time I'll be sitting next door. You'll understand why after reading this paper here on the desk. (This was a page of instructions to M explaining the idea of the one-way screen.) I have here also another questionnaire for you. I'll appreciate it very much if you could answer it." This was usually effective in inducing M to sit by the desk rather than on one of C's chairs. Thus any approach of C was clearly defined. There were very few cases in which M herself initiated an interaction sequence with C.

(2) *Stranger*. This time E approached C in the nursery school asking her to come and play "in that lovely little nursery school we have". It took about 3-5 min to get from the nursery school to the observation room. On the way E was friendly and talked to C, describing again the various toys and the 'teacher'. On arrival, after introducing C to the smiling 'teacher', E excused herself (to mend toys), at the same time St called to C to show her the toys.

(3) *Behaviour pattern of stranger*. The general pattern of the stranger's behaviour might be described as moving from 'high availability' to 'low availability'. For 3 min she showed C around the room, demonstrating some of the toys. For the next 5 min, she sat and read a magazine, still within C's sight. For the following 5 min she moved behind the curtain, still reading or leafing through the magazine, sitting near the desk but facing in C's direction. At the end of this period, and for the rest of the session, she sat at the desk doing some work. She was still as friendly as before, when approached by C, but her responses were much more laconic, and if C called for her attention more than twice she explained that she was busy at the moment doing some work. On the whole St was smiling and reassuring, but she did not initiate any interaction herself, nor did she pay any attention to C unless C approached her.

Order. To eliminate any bias resulting from the order in which the sessions took place, the subjects were divided into two groups. One group was observed first with the mother and the other was observed first with the stranger. These were referred to as the 'mother first' group and the 'stranger first' group. Instructions to the child and the mother were slightly different for the two groups as has been indicated above.

Dependency. While the variables anxiety, stimulus-person, and order were controlled experimentally, the dependency variable was based on an initial 30 min observation of C with M in the nursery school. The behaviour of C in the initial observation was scored by the same method as described above.

This total dependency score was also the basis on which subjects were matched when assigned to the various experimental groups.

RESULTS

The hypotheses were tested by a four-way analysis of variance in which one of the variables was based on repeated measurements (Winer, 1962) (i.e. one subject gives more than one score). Account was taken of the fact that the groups were matched on general level of dependency. The variables were:

A = Anxiety (high vs. low).

D = Dependency (high vs. low).

O = Order (M first vs. St first).

Repeated measurement:

P = Stimulus Person (M vs. St).

The distributions of the total dependency scores of the matched quartets appeared approximately normal.

The analysis was first performed for the total dependency scores and then separately for Attention-seeking and Proximity-seeking. Tables 3, 4 and 5 show the analyses of variance of the data. The means presented in the discussion of the separate hypotheses are derived from these analyses and the significances of differences are to be found in the analysis of variance tables, as well as in the tables of means.

TABLE 3. ANALYSIS OF VARIANCE FOR TOTAL DEPENDENCY

Source	SS	df.	M.S.	F	P*
Between subjects	23288.12	63			
Between quartets	6984.68	15			
D	1004.10	1	1004.10	2.36	($P < 0.125 > 0.05$)
residual	5980.58	14	427.18		(one-tail)
Within quartets	16303.44	48			
A	1382.91	1	1382.91	4.36	0.025
O	0.67	1	0.67		(one-tail)
AD	57.19	1	57.19		
AO	14.53	1	14.53		
DO	1151.75	1	1151.75	3.63	NS
ADO	363.38	1	363.38		
residual	13333.01	42	317.45		
Within subjects	12468.25	64			
P	2030.63	1	2030.63	11.3	0.005
AP	10.16	1	10.16		(one-tail)
DP	41.44	1	41.44		
OP	295.41	1	295.41	1.6	NS
ADP	51.66	1	51.66		
ODP	32.35	1	32.35		
AOP	0.03	1	0.03		
PADO	21.97	1	21.97		
residual	9984.60	56	178.30		
Total	35756.37	127			

*All P's are two-tailed, unless otherwise stated.

A = Anxiety.

D = Dependency.

O = Order.

P = Stimulus Person.

Hypothesis 1: a generalization gradient of dependency behaviour

According to the generalization gradient principle we would expect the frequency of dependency behaviour exhibited to St to be less than that exhibited to M. This prediction was confirmed (see Table 4) by our analysis of variance (Table 3, line P).

Hypothesis 2: the effectiveness of the anxiety provoking situation

Anxiety is known to increase level of responsiveness in general, Kimble (1961, p. 447) and we expected it to have the same effect on the frequency of dependency

behaviour (Walters, 1960 a and b). The difference between the frequency of total dependency under Low and High anxiety conditions (see Table 5) confirms this expectation. (Table 3, A, $P < 0.025$.)

TABLE 4. MEAN FREQUENCY OF TOTAL DEPENDENCY BEHAVIOUR TO MOTHER AND TO STRANGER

Stimulus person	N	Total dependency		P*
		Mean frequency	Est. S.E.	
Mother	64	44.50	2.36	< 0.005
Stranger	64	33.23		

*One-tail test.

We had also expected that the anxiety condition would have the same effect whether the child was observed with M or with St. In the generalization gradient terminology this means that the increase in drive level (anxiety) will increase the amount of generalized reaction potential. This prediction is confirmed in the analysis of variance. The interaction between anxiety level and stimulus person is very small and insignificant (Table 3, line AP).

TABLE 5. MEAN FREQUENCY OF TOTAL DEPENDENCY UNDER LOW AND HIGH ANXIETY

Drive level	N	Total dependency		P*
		Mean frequency	Est. S.E.	
High-anxiety	64	43.52	3.15	< 0.025
Low-anxiety	64	34.22		

*One-tail test.

When the means are presented in the form of generalization gradients (Fig. 3), they clearly conform to Miller's hypothesis concerning the effect of increased drive level on the generalization gradient.

Hypothesis 3: a comparison of the relative effects of high anxiety on attention seeking and proximity seeking

Attention-seeking is supposed to be a more mature form of dependency, while proximity-seeking is considered as more infantile.

When the analysis of variance is carried out separately for these two components (cf. Table 6, line A and Table 7, line A), anxiety is shown to have an effect on proximity-seeking only, and none on attention-seeking (Table 8). This result supports

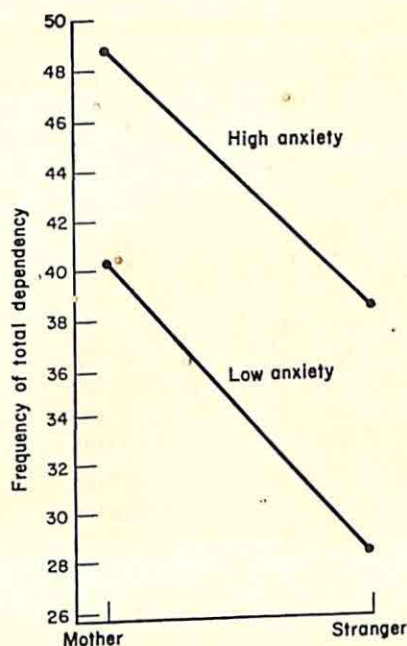


FIG. 3. Generalization of total dependency from mother to stranger under two anxiety conditions.

our notion that anxiety has a stronger effect on the less mature form of dependency, and supports the idea of a link between 'fear' and 'clinging' which was found in monkeys (Harlow, 1958). It also lends further support to the interpretation of Schachter's (1959) measure of affiliation as proximity-seeking.

The next logical step is to compare the generalization gradients of these components.

As can be seen in Table 9, from a comparison of the differences between reactions to mother and stranger, the generalization gradient for attention-seeking is much steeper than that for proximity seeking. The analysis of variance shows (cf. Table 6, line P and Table 7, line P) that while the difference between M and St for attention-seeking is highly significant, this is not the case for proximity-seeking. This result is consistent with the argument that proximity-seeking is a more primitive form of dependency and therefore less discriminating.

Hypothesis 4: the effect of general level of dependency on generalization of dependency

As already described, the children in our sample were classified as high or low-dependent on the basis of their total dependency scores in an initial observation session with their mothers.

According to hypothesis 4 we would expect the high-dependent group to exhibit more dependency to the stranger, as well as to mother, and hence a high generalization gradient than the low-dependent group.

The means in Table 10 and gradients in Fig. 4 reflect the predicted differences, though they cannot be considered as statistically significant (Table 3, line D). The

TABLE 6. ANALYSIS OF VARIANCE FOR ATTENTION SEEKING

Source	SS	df.	M.S.	F	P*
Between subjects	10245.75	63			
Between quartets	1182.75	15			
D	284.77	1	284.77	4.44	0.05
residual	897.98	14	64.14		(one-tail)
Within quartets	9063.00	48			
A	23.77	1	23.77		
O	107.64	1	107.64		
AD	1.00	1	1.00		
AO	33.06	1	33.06		
DO	315.06	1	315.06	1.57	NS
ADO	178.89	1	178.89		
residual	8403.58	42	200.09		
Within subjects	6954.00	64			
P	1350.56	1	1350.56	14.54	0.005
AP	9.77	1	9.77		(one-tail)
DP	159.39	1	159.39	1.72	NS
OP	129.39	1	129.39		
ADP	0.25	1	0.25		
ODP	16.00	1	16.00		
AOP	68.06	1	68.06		
PADO	19.14	1	19.14		
residual	5201.40	56	92.88		
Total	17199.75	127			

A = Anxiety.

D = Dependency.

O = Order.

P = Stimulus person.

lack of significant interaction in the analysis of variance (Table 3, line DP) indicates the similarity of the slopes of the gradients (Fig. 4).

Hypothesis 5: a comparison of attention-seeking behaviour and proximity-seeking behaviour in high- and low-dependent children

Although we did not expect to get any interaction between stimulus person and level of dependency for the attention-seeking behaviour, we *did*, however, expect to find such an interaction for proximity-seeking behaviour, on the assumption that the high dependent child undergoes a specific discrimination training in his proximity-seeking behaviour.

This expectation was not confirmed; there is no significant interaction between stimulus-person and dependency level for proximity-seeking (Table 7, line DP).

Thus one might conclude that there is no evidence in this study that proximity-seeking is reinforced exclusively by the mother, nor that a possible learning history

TABLE 7. ANALYSIS OF VARIANCE FOR PROXIMITY SEEKING

Source	SS	df.	M.S.	F	P*
Between subjects	10987.68	63			
Between quartets	4121.62	15			
D	219.41	1	219.41		
residual	3902.21	14	278.73		
Within quartets	6866.06	48			
A	1044.10	1	1044.10	8.27	0.005
O	91.44	1	91.44		(one-tail)
AD	43.07	1	43.07		
AO	91.44	1	91.44		
DO	262.03	1	262.03	2.08	NS
ADO	32.35	1	32.35		
residual	5301.63	42	126.23		
Within subjects	4542.76	64			
P	69.10	1	69.10		
AP	39.85	1	39.85		
DP	38.29	1	38.29		
OP	33.78	1	33.78		
ADP	59.10	1	59.10		
ODP	2.85	1	2.85		
AOP	71.19	1	71.19		
PADO	82.13	1	82.13		
residual	4146.47	56	74.04		
Total	15530.44	127			

A = Anxiety.

D = Dependency.

O = Order of presentation.

P = Stimulus person.

*All P's are two-tailed unless otherwise stated.

TABLE 8. MEAN FREQUENCY OF ATTENTION AND PROXIMITY SEEKING UNDER TWO ANXIETY CONDITIONS

Anxiety condition	Attention seeking				Proximity seeking			
	N	Mean	Est. S.E.	P*	N	Mean	Est. S.E.	P*
High anxiety	64	22.30	2.50	NS	64	21.22	1.98	< 0.025
Low anxiety	64	21.08			64	13.14		

*One-tail test.

TABLE 9. MEAN FREQUENCY OF ATTENTION AND PROXIMITY-SEEKING TOWARDS MOTHER AND STRANGER

Stimulus person	Attention-seeking				Proximity-seeking			
	<i>N</i>	Mean	Est. S.E.	<i>P</i> *	<i>N</i>	Mean	Est. S.E.	<i>P</i> *
Mother	64	26.28	1.70	< 0.005	64	18.22	1.52	NS
Stranger	64	17.09			64	16.14		

*One-tail test.

TABLE 10. MEAN FREQUENCY OF TOTAL DEPENDENCY BEHAVIOUR OF LOW- AND HIGH-DEPENDENT CHILDREN TOWARD MOTHER AND TOWARD STRANGER

Drive level	Stimulus person							
	Mother				Stranger			
	<i>N</i>	Mean	Est. S.E.	<i>P</i> *	<i>N</i>	Mean	Est. S.E.	<i>P</i> *
High dependency	32	47.66	3.34	NS	32	38.00	3.34	< 0.05
Low dependency	32	41.34			32	28.47		

*One-tail test.

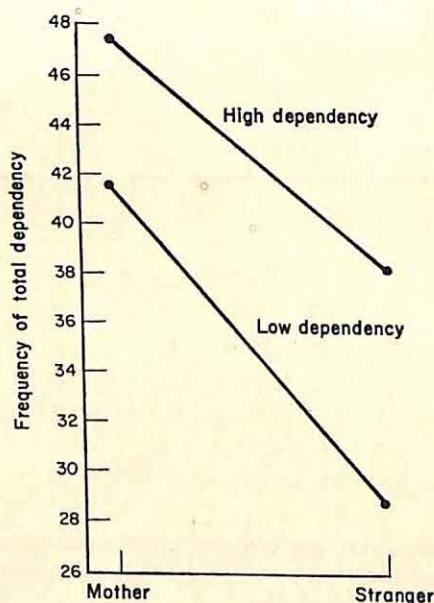


FIG. 4. The generalization gradient of total dependency of two groups with different dependency levels.

of the "you do not cling to stranger" has any effect.

A somewhat puzzling result is that the overall difference between high- and low-dependent children, as classified in the initial stage of the experiment, is reflected in

the significant dependency main effect for attention-seeking (Table 6, line D) but not in the dependency main effect for proximity-seeking (Table 7, line D). In this connection the much greater residual variation for proximity-seeking than attention-seeking is to be noted.

DISCUSSION

Two main themes arise from the results of the present study: (1) the nature of the generalization gradient of dependency behaviour and factors influencing its range, (2) the nature of the behaviour categories which are grouped under the generic term dependency.

(1) *The Generalization of Dependency*

The hypothesis that a child will exhibit more dependency behaviour toward his mother than toward stranger was confirmed for Total Dependency. This lends support to the notion that the mother functions as a discriminative stimulus in the initial acquisition of at least some dependency behaviour. Any other person, not involved in the initial training, can be regarded as a stimulus 'different from' the original discriminative stimulus, thus eliciting less of the behaviour that was acquired in the presence of the discriminative stimulus. The nature of the 'similarity dimensions' on which this generalization takes place is still open to investigation and the fact that this study did find a gradient of generalization should encourage such further investigation.

The effect of anxiety on the generalization of dependency. The results of this study are compatible with the findings of other studies in this field. Although the experimental manipulation of anxiety level in the present study differed considerably in method from other studies (Walters, 1960 a, Schacter 1959) the results are still the same. Anxiety increased the frequency of total dependency behaviour and, as predicted by Miller's theory, it increased the amount of generalized dependency (to stranger) as well.

This finding runs counter to a fairly common notion that under high anxiety a child will avoid strangers. This notion does not appear to be valid, at least not when the alternative to approaching a stranger is that of facing the anxiety-provoking situation alone.

The generalization of dependency by children with different dependency levels. We expected the high-dependent children to show more generalized dependence than the low-dependent children. The difference between the total dependency score of high-dependent children and that of low-dependent children is not significant. The results for attention-seeking behaviour, however, support this expectation in the statistical test.

(2) *Behaviour Categories Included in the Term 'Dependency'*

Two subgroups of dependency behaviour seem to emerge from the analyses of variance. One consists of seeking positive attention, approval, and help. The other consists of seeking proximity and physical contact. We named the first one attention-seeking and the latter proximity-seeking. These two subgroups are somewhat reminiscent of the distinction between mature and immature dependency (Heathers, 1955, Sears *et al.*, 1965).

The question was whether these two subgroups behave in the same manner under various experimental manipulations. In the present study three questions were posed: (a) whether both attention-seeking and proximity-seeking will have the same generalization gradient. (b) whether the anxiety condition will affect both of them in the same way. (c) whether general level of dependency will affect both in the same way.

The answers were definitely negative. (a) The slope of the two generalization gradients is different; that of attention-seeking is much steeper than that of proximity-seeking. While the difference between the mean frequency of attention-seeking scores to mother and stranger is highly significant, the difference between the mean frequency of proximity-seeking scores to mother and stranger is far from being significant. The proximity-seeking behaviour which is considered generally as a component of dependency behaviour seems to belong to a more primitive set of responses. Hence it does not discriminate between mother and stranger, and does not yield the expected generalization gradient. (b) Again, though the difference in the proximity-seeking mean frequency scores between the two anxiety conditions is large and highly significant, the difference between those two conditions for the attention-seeking scores is negligible. Anxiety seems to have a greater effect on the less mature, more primitive, form of dependency. (c) Lastly, while high-dependent children show a greater mean frequency of attention-seeking than low-dependent children, there is no difference between these groups in regard to the mean frequency of proximity-seeking.

SUMMARY

The present study was designed to investigate the generalization of dependency behaviour in preschool children. The influence of two factors on the range of generalization was studied (a) anxiety and (b) general level of dependency. Two subgroups of dependency behaviour, attention-seeking and proximity-seeking, were compared. A sample of sixty-four girls aged 3-5 was divided into two groups of high- and low-dependency. They were then assigned to two experimental groups, high and low anxiety. Each child was seen twice, once with her mother and once with a stranger. The order of presentation of the stimulus person was balanced.

The results support our main hypotheses: (a) the frequency of total dependency behaviour towards Mother is significantly higher than towards the stranger. In the comparison of the two subgroups of dependency behaviour this prediction was confirmed for attention-seeking only. (b) The frequency of total dependency behaviour is significantly higher under high-anxiety conditions than under low-anxiety conditions. When attention-seeking and proximity-seeking are compared this result is found for proximity-seeking only. (c) Children classified as highly seeking behaviour than the low-dependent children. This is not the case with proximity-seeking, nor does it apply to total dependency.

The differences between attention-seeking and proximity-seeking are explained in terms of mature vs. immature forms of dependency.

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AN EXTENSIVE CHANGE IN ENVIRONMENT AND ITS EFFECTS ON BEHAVIOUR—A NOTE

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This report will be mostly concerned with the behaviour of J., a girl aged 12 at adoption, and to a lesser extent with D., a younger brother aged 6 at the time. Both were adopted by the present writer when he married their true mother. Their father had been killed a little more than a year before, in an automobile accident. The changes in their environment concomitant with their adoption may be described as follows.

Geographically, both J. and D. went from the Canadian East to the American West. They went from a city of some two million people to a town of approximately six thousand. From a *religious* point of view, they went from predominantly Jewish friends, Jewish rituals, and Jewish holidays to a situation involving one hundred per cent non-Jewish friends, non-Jewish rituals, and non-Jewish holidays. From a *familial* point of view they went from a family of three to one of six, in which the oldest (the 12-year-old) girl was no longer the oldest. In the East they had been surrounded by relatives, in the West there were none. *Educationally*, they went from a Canadian parochial school of some five hundred, where their grandfather had been the principal, to an American school of 2200 where the principal was a stranger. Previously J. had been a leader in her class, but now was only one of many members of the class. *Culturally*, J. and D.'s time had been filled with visits to museums, exhibitions, concerts, etc. which abound in a big city. Although such events do occur in their new environment, they take place less frequently. Furthermore, little time is consumed in travelling from place to place in a small town, and this in turn provided more leisure time. Add to this the fact that in the East they could not, because of age, be admitted to the cinema, and one is aware that a considerable segment of their recreational activities underwent a change. The neighbourhood *community* from which they came had been mostly commercial, heterogeneous with regard to interest, and polyglot regarding communication. The community in the West, to which they had come, was non-commercial, homogeneous in interests, and monoglot in the language spoken. It was a university area. Other *minor* (?) *points* of difference involved changes in diet, in climate, the fact that J. and D. had entered school in the middle of a term, and the fact that there were small household duties now that there was a family of six.

Their previous environment might be summarized as follows: Canadian, Eastern, urban, polyglot, Jewish, commercial, "relative-full", and their present environment as American, Western, university-rural, monoglot, Protestant, non-commercial, "relative-empty".

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What were J.'s reactions to the change? She commented at one time that the size of the main street in this university town was about the size of a neighbourhood shopping centre she was acquainted with in the East. When J. was told about this paper her reaction was two-fold—she said that she thought that the personality of the individual involved was important, and secondly that she herself had, as a matter of fact, looked forward to coming to the West, not, however, because of dislike of the life she had led back East.

Had the move resulted in subtle covert, or in frank overt symptoms? It was realized that in the time that had elapsed since adoption, J. had passed through an important phase in her life, i.e. had matured. Conceivably then, this developmental period by itself, or in conjunction with the change in environment, might have resulted in adjustment problems. Consequently the base-line from which deviation was evaluated took into account both these possible variables, i.e. adoption and maturation.

Writing some five and a half years after adoption the following comments may be made. From the viewpoint of one facet of personality, J. might be described as even-tempered; both before and after adoption. Her behaviour whenever she felt "blue" was to become quiet. However, such infrequent episodes, when they did occur, rarely lasted more than a day. When happy, she would give vent to feelings of exhilaration at just "being alive" by good-natured spontaneous yells. Neither of these behaviours appeared to change appreciably over the years. Socially she established fast and firm relationships on coming West and at present has a boy friend. J. feels completely comfortable in talking to individuals two or three times her age. Still another aspect of J.'s personality concerns academic performance. At school her grade point average, for the last few years, would place her in the top 10–15 per cent. This, if anything, reflects improvement. This may be due to different academic standards, or more likely because of the fact that in the East her grandfather had been the principal of her school. This fact had been a two-edged sword. On the one hand it yielded ego-gratification by the prominence she felt it had provided, and on the other hand she keenly felt, she said, the strain of "living up to expectations". In the West, as she phrased it, she could academically become a "people watcher". Such an easing of tension, combined with her belief that teachers in the West were less "pressury", are probably important factors in her improved scholastic achievement. Her goals and ambitions, while not formulated then or now, are not out of the ordinary, nor do they seem discernibly affected. There was no occurrence of such symptoms as stuttering, enuresis, tics, and the like.

Since coming out West both J. and D. had returned for short visits to their grandparents in the East. Such trips had no apparent deleterious effects—they were glad to go and glad to return. Lest it be said that the writer had a set *not* to perceive change, though his training and experience had been otherwise, the following may be said: the writer had no desire to fool himself, and furthermore, a high school senior who knew J. in her new environment wrote in her school annual, "Well, the year has come to a climax. Moving from one place to another in the middle of the year is sometimes a difficult adjustment but your warm personality made it very easy for you . . ." A half-brother (age 20) when asked (in a non-leading manner, it is hoped,

and in the absence of J.) whether he thought there had been any changes (he had known J. at camp in the East and before adoption) replied in the negative.

It might well be concluded that affectively, cognitively, conatively, socially, etc. changes were not observed, i.e. nothing was noted or reported that would suggest the presence, now or in the past, of a disturbance in response to the changed situation. What has been said of J. may also be said of her younger true brother, D.

Science is concerned with both similarities and differences, and while in this instance the latter seem more dominant, the former cannot be ignored. What are some of these similarities? An affectionate true mother, an accepting foster father, an unbroken concern with and interest in music (J. has played the violin for the last 10 years), and a continuous intellectual atmosphere. While their true father earned his livelihood as a salesman, he had also been a poet and as such had had books published by two well-known presses. These facts may all have facilitated the transition from one environment to another.

The point of this note is simply that apparently radical differences in the environment may be easily taken in their stride by an adolescent or a child if a stable family environment is continuously present. Inner resources and maintenance of basic values cannot and should not be ignored. It indicates to the would-be adopter, and to the person contemplating a change in city, country, or even culture, that what may appear to the adult to be a radical change in environment may, in fact, not be so. Such a change *may* be tolerated by the child or adolescent with relative impunity.

A NOTE ON THE REHABILITATION OF THE FAMILY IN THE TREATMENT OF THE ORPHAN SYNDROME IN INFANTS

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THE DEPARTMENT of Social Pediatrics of the Warsaw Medical School treats children suffering from psychosomatic disorders arising either from organic disease or from deprivation of parental care. The former are usually brought by their families, the latter usually come from institutions.

The Department has been open to parents since its inception in 1958. Our experience very soon convinced us that close collaboration with parents is essential in cases of psychosomatic disorder; the basic condition of permanent recovery is to prevent estrangement between child and family, or to restore the relationship if already estranged. We propose to illustrate our methods of work with parents for the rehabilitation of patients' families.

(1) Case 187/59, Zosia B.

Admitted aged 1 year 8 months with severe anorexia, vomiting and insomnia.

The child had been in a residential nursery for 5 months. Her behaviour was extremely negative, with frequent auto-aggressive acts, e.g. head-banging, pulling out her hair, throwing herself on the ground. She had to be forced to eat and vomited often. At night she stood in her cot for long periods shaking the bars. Her father was alcoholic, and her disturbed behaviour had therefore been attributed to suspected damage to the central nervous system. A few days' observation suggested the hypothesis that her behaviour represented a severe and prolonged reaction of despair and protest in a child with normal potential for mental development, who was deeply attached to her family.

The case history confirmed this supposition. The patient came from a highland family, and had been placed in the nursery on account of divorce proceedings. Her mother was in a deep depression, which had been thought to confirm the theory of constitutional instability, with a poor prognosis. Mrs. B. had been allowed to visit Zosia in the nursery only once a week, and then only to observe her through glass.

We immediately sent for the mother and persuaded her to stay with the child for some hours daily and to pet her freely. Zosia's dramatic improvement soon disposed of the theory of constitutional abnormality.

We reassured the mother of the child's psychic normality and convinced her of Zosia's deep attachment to her, and that on this account her care was essential for the child. We also helped her to understand that the child's reactions to the long separation (e.g. her need for the mother's constant presence, her aggression and ambivalence) were normal in the circumstances. It was not easy to find a way of returning the child to her home without upsetting the mother's plans. We eventually decided to appeal to the grandparents. Zosia's grandmother immediately arrived, and she was able to leave us, after only two weeks' stay, in good condition. On our advice, she spent two weeks in Warsaw with mother and grandmother, and then went home with the latter. The mother followed a year later.

We have kept Zosia under constant observation. She is now aged 5; 6, is intelligent, serene, loves her mother and likes to be petted. She draws and models enthusiastically; perhaps she will be an artist like her mother and grandfather.

We would emphasize the social aspect of this case: first, the negative role of misguided authorities

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who recommended the placement in an institution; secondly, the facile attribution of abnormalities in child behaviour to hereditary or congenital factors; thirdly, the complete rehabilitation of the child using exclusively the resources of her own family.

(II) Case 68/60. *Żebek E.*

Admitted at 10 months on account of psychic under-development, diminutive stature and spasticity affecting all limbs.

Born prematurely, weighing 1750 g, he was admitted to a residential nursery at 7 months, having been deserted by his unmarried mother. His psychosomatic rehabilitation was difficult and prolonged. After 7 months treatment, including psychotherapy, height and weight were adequate, and he was better able to stand up and manipulate, but his intellectual development was retarded.

A critical spurt in development occurred when he aroused the deep affection of one of the nurses, who began to mother him, both on and off duty. Eighteen months later, he was clinically normal, with a normal D.Q. (Gesell 1947). The spastic paralysis of the right leg remained, but he was now able to walk. This handicap calls for surgery, but this will be postponed for the present. Żebek has become unusually handsome and charming, so we began to hope that foster-parents could be found, despite his lameness. In the course of preparing adoption papers we found the address of his maternal grandparents, and invited them to the Department. We found they were still young and prosperous. They had known of the child's existence and whereabouts, but had not cared to see him, on account of their disappointment with his mother and the resentment which they had transferred to him.

We exerted no pressure, but encouraged the contact, and Żebek did the rest. He particularly appealed to his grandfather, who visited more and more often and eventually adopted him.

(III) Case 229/60. *Eva W.*

Admitted on account of arrested psychic and psychomotor development, Eva was illegitimate. Each parent already had a legitimate child. They lived together with the paternal grandmother for about 18 months.

Eva was a healthy baby, born at term, but her mother and grandmother felt she was ugly and "misbegotten". The mother neglected her, and could not bear to touch her. At 3 weeks Eva was hospitalized, the first of several spells of in-patient treatment. The intervals she had spent in a day nursery, and recently in a residential nursery, coming home only on Sundays.

On admission to our unit, Eva, aged 12 months, could not stand, and did not babble. She was socially unresponsive and showed no interest in toys. Obese, sluggish and dull, she was indeed repulsive. She made good progress, being fortunately mothered with great devotion by a first-year medical student. As the maternal care deprivation syndrome subsided she reached a normal level of psychological development and became a pretty and attractive little girl.

It was hard to gain parental cooperation. The mother deserted Eva's father, as she had done her husband, and took her son to Silesia. After many long interviews with both parents, we had to accept that the mother had no intention of changing her mode of life, and she gladly renounced her rights in the child. The father and grandmother gradually became more interested in Eva, and eventually decided to take her home, where she has lived since 19 months, attending our out-patient clinic for regular observation and developing normally. Her father is now an affectionate parent, proud of her looks and development.

(IV) Case 1/58. *Kasia Ż.*

Admitted at 11 months for arrested psychosomatic development. Kasia had been slightly premature, weight at delivery 2580 g, height 47 cm. She was very ill during the neo-natal period, but after that her somatic development seems to have been normal. On admission she appeared well-nourished, rather obese, weight 9250 g, her mucous membranes were moist, her skin healthy.

Her mother had been disturbed for some time by the signs of psychomotor retardation. At first this was attributed to the premature birth, and the mother was reassured by her medical advisers. At 10 months several specialists in consultation decided that there were genuine symptoms of psychomotor retardation and somatic disturbance.

We learned from the mother and nurse that the parents were well-off and well educated. Both were divorced, with children by former marriages. Kasia was the only child of the present marriage, and was wanted. From birth she had been under highly qualified professional care. From the arrival of the present nurse at 3 months, Kasia had suffered from poor appetite and vomiting, often simply at the sight of food. However, she had continued to gain weight, being fed by the nurse in her sleep.

She had been kept in almost surgically aseptic conditions; no-one entered the room but the nurse and the parents. She was rarely picked up, and was left to cry on principle. Contact with the mother was restricted partly because she was working in order to pay the costly nurse!

Observation demonstrated a fully developed maternal care deprivation syndrome. At 11 months Kasia showed little reaction to sight or touch of mother or nurse. She was unsmiling and expressionless, even in the mother's presence. She could crawl but could not stand, even when supported. Grasping was age-adequate, but disturbed by unnecessary movements. Her play was primitive and monotonous, with marked inattention. She did not feed from a spoon and only fed from a bottle, like a child of 4 months. Frequent vomiting reflexes appeared while feeding.

Her emotional condition was treated by a psychologist, acting as substitute mother. After a few days Kasia began to distinguish her from other people and signs of further development began to appear. The responsiveness elicited was used to establish an emotional bond between K. and her mother, to whom we explained the "home hospitalismus" and its effects. The psychologist systematically helped her to relate to her child. Her resistance to playing on the floor, messy feeding, petting or cuddling the child, was tactfully and gradually dissolved, and she eventually agreed to dispense with the nurse.

For the next 2 years the mother sacrificed her professional activity in order to look after K. herself. We maintained close contact for 4 years. K's retardation yielded very slowly at first, but 8 months after leaving hospital her D.Q. (Gesell) had become normal. She is now 5 years old, attends kindergarten, shows a vivid intellectual development and has an especially rich vocabulary.

Not many of our in-patients show this syndrome of "home hospitalismus" but we find it more often among out-patients. The great number of these "orphans in their own home" (so called by Janusz Korczak (1958), the great Polish pedagogue and physician) requires a special report. We have not given details of the medical aspects of the cases above, as we wanted to emphasize the social and pedagogical problems.

In a preliminary evaluation of the experiences of the Department, the familial environment of the children treated may be divided into 4 groups (Table 1).

TABLE 1. CHARACTERISTICS OF THE FAMILIAL ENVIRONMENT OF THE PATIENTS

(A)	Families economically and socially stable, strong personal bonds	51
(B)	Families economically and socially unstable, personal bonds loose	12
(C)	Families economically and socially stable but disturbed in personal inter-relationships	14
(D)	Families completely wrecked, personal bonds ruptured or non-existent	18
		95

(A) *Socially and economically sound families with an emotionally favourable climate.* Our work with this group consisted in preventing the exclusion of the child from the family, explaining the children's peculiarities to the parents as due to the nature of the complaint and/or long absence from home.

(B) *Socially and economically unstable families (inadequate housing, irregular employment, alcoholism, poor cultural level).* In this group contact was successfully maintained with only one family.

(C) *Families where the main problem lay in the parents' personalities (neurosis, psychosis, severely pathological parental attitudes, wrecked or disintegrating families), economic conditions being fair or even good.* Out of fourteen families of this type, we achieved long-term re-education of the mother in five cases. Unlike the families of group B, these parents ask for help, support and reassurance, and collaborate with the staff in trying to help the child. Eleven of the fourteen families are still attending the Department.

(D) *Incomplete families (solitary parents) and wrecked families, with little or no bond between parent and child.* These children were admitted after long periods of institutional care in residential nurseries or hospitals (sometimes as long as 2 years). We could usually only see the parents of this group by exerting administrative or even legal pressure, and the restoration of emotional bonds between parents and child was a lengthy business. The staff had to create a climate of sympathy and admiration for the child, and to persuade tactfully the mother to play with it and nurse it, thus enabling the child to arouse an emotional response in her. Often parents who have rejected their child as "ugly" or backward (on account of emotional deprivation) accept it once they see some improvement. The restoration of the mother-child relationship is essential. One mother had had no contact with the child for 2-yr. and lived out of Warsaw, so we decided to re-establish the relationship under direct supervision, and admitted her for 3 weeks.

From a total of eighteen cases, we were able to return only five children to their own homes. Four were mentally deficient, so we made no attempt to collaborate with the parents and placed the children in a special institution. In nine cases the family was irreversibly wrecked or the parents renounced their children definitely. In these cases we obtained court orders depriving the parents of parental rights and placed the children for adoption. A physician and a psychologist prepare the future foster-parents acquainting them with the child and discussing problems of management. Since May, 1961, we have collaborated closely with the Adoption Section of the Children's Friendly Society. All children whose development disturbance was due to maternal deprivation were placed either with their own or with a foster family. All these cases present great social difficulties. Prophylaxis and treatment would be greatly facilitated if social workers could be suitably trained in adequate numbers to take charge of the children and their usually inadequate families.

SUMMARY

Among children admitted to hospital for psychosomatic disorders, a number are found to be suffering from the "orphan syndrome" or parental care deprivation syndrome. These children require good mothering from staff, and establishment or renewal of emotional bonds with their parents or other relatives. Symptoms include anorexia, vomiting, sleeplessness, retarded physical and mental development, lack of emotional responsiveness. These conditions occur in children with institutional backgrounds and in those suffering from severe emotional deprivation in their own homes. Four cases are reported, and an intake of ninety-five cases is statistically analysed in terms of the type of family background.

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BOOK REVIEWS

Parents, Children and Adoption: A Handbook for Adoption Workers. JANE ROWE. Routledge and Kegan Paul, London, 1966, pp. x + 294. 32s.

ALTHOUGH Miss Rowe states that she makes no pretence to originality, she underestimates what she has done. Designed to give practical help and guidance to field workers, this book most valuably and thoroughly brings together a mass of background knowledge and practical experience which was previously scattered throughout adoption literature or in the reference texts of allied disciplines.

In Part I, on the Natural Parents, there is a useful analysis of groups of unmarried mothers, with a discussion of practical casework with the unmarried mother and an indication of the greater need for this with the unmarried father. Enhancing the readability and interest of this book is the likeable fluency of style with easy and frequent transition from theoretical discussion to individual case histories illustrating and highlighting this. In adoption, workers can all too often rely on personal subjective judgements, instead of looking to what is now known as objective fact and research knowledge.

In Part II, on Heredity and Environment, there is a most commendable succinct review of the general principles of heredity, with discussion of specific examples relevant to adoption. It might have been helpful if the author had further illustrated how the appropriate consultant in medicine or psychiatry can advise the caseworker about such problems as intelligence and the inheritance of specific conditions. However, this lucid synopsis will be invaluable in adoption situations where workers or lay committees lacking information could, for example, view a baby as unadoptable because of such a history as paternal criminality. Although some generalization and simplification is inevitable in a review of such a wide field, Miss Rowe quotes extensively from available research studies to give clarity and authority to her discussion and counsel.

Her views, however, possibly become more subjective in Part III, *The Creation of New Families*. It is debatable whether it is sound advice to state, with regard to adoptive parents, "... The proportion of applications which have to be rejected will depend very largely on the number of children needing homes. Most parents who carry through with an application could probably be satisfactory parents to some child. . . ." (page 190). The implication in the ensuing paragraphs appears that rejection must result mainly from excess of demand over supply. It is none-the-less possible that some children could achieve better adjustment in the best "family type" of Children's Home rather than by being placed in a potentially "mediocre" adoptive home with, by contrast, pre-existent emotional stresses. There is, however, no adequate objective information based on comparative research studies about this, and Miss Rowe does not discuss alternatives to adoption.

The demanding casework situation of rejecting prospective adopters is discussed with a sensitivity and understanding that will be helpful to many readers, and another valuable aspect of this book is the author's insight into the problems and feelings of anxiety and uncertainty of adoption workers, and "their need for self-awareness".

Part IV discusses present Statutory and Legal Requirements, indicating the anomaly that the protective aims of the law operate too late to improve an inadequate assessment before placement.

This thoughtful and comprehensive appraisal should be of interest to all concerned with adoption in offering a fuller understanding of current attitudes, practices and difficulties. By indicating also those areas in which no adequate body of knowledge supports current practice, it should promote also an urgent reconsideration of research needs.

ALEXINA M. McWHINNIE

Handbook of Mental Retardation Syndromes. CHARLES H. CARTER. C. C. Thomas, Springfield, Illinois, 1966, pp. xxii + 168. \$8.

The Biosocial Basis of Mental Retardation. SONIA F. OSLER and ROBERT E. COOKE (Ed.). Johns Hopkins Press, Baltimore, Maryland, 1966, pp. vii + 151. 44s.

THESE two books exemplify not only the diversity of problems that the study of mental deficiency presents both clinically and academically but also the very many different approaches which are possible.

The first book, that by Dr. Carter, confines itself to the description of medical conditions associated with mental defect. It does represent a dangerous tendency of limiting the interest of the physician to purely organic manifestations. This leaves not only the matters of rehabilitation, education, and physical and mental development to the other disciplines, but also tends to ignore the psychiatric problems of affectivity, personality development, and social adaptation, and is largely the consequence of the paediatrician, rather than the psychiatrist, assuming clinical control. In the reviewer's opinion the only justification for writing such a book would be to provide a reference text and a full bibliography as well as a critical assessment of the literature. However, this short book aims at a very brief but all-inclusive mention of all the medical conditions which may be associated with mental deficiency. very rarely spending more than a page on any individual syndrome. There is no bibliography and virtually no references. Its shortcomings are largely due to confusion as to its aims and the type of audience to which it is addressed. On the jacket it is described as for the use of physicians, psychologists, and parents. It is obviously impossible to meet the needs of all these groups in one short book. It tends as a result to be too superficial to be of any use as a reference book for the physician and too technical for the lay reader. Inevitably the impression one gets is of superficial and sometimes inaccurate information. The other disadvantages, such as the muddled classification (though the blame for this should be laid at the door of the accepted American classification), and some inaccuracies in the text, are minor defects compared to its major fault of design and purpose.

The second book, by Sonia F. Osler and Robert E. Cooke, is based on some of the papers presented at the seminar course in Mental Retardation at the Johns Hopkins University School of Medicine. The stress of this particular course was upon the biological and social factors producing mild degrees of retardation. The book does not attempt to be comprehensive but deals with selected aspects of the subject. The result is seven papers that sample the biosocial basis for mental retardation without there being any attempt to cover the field in a systematic manner.

The presentation of the subject matter in this book is according to the best accepted standards of scientific writing, and all the papers contain full references and bibliography.

The first paper, on the 'Mentally Handicapped in a Technological Society' by Professor Eli Ginzberg, deals with problems of incidence of mental defect in the United States, using data collected during wartime conscription, with special reference to men rejected from military service for social and intellectual subnormality. He then examines the socio-economic factors in the causation of mental defect and finally discusses the problems of rehabilitation into the community, particularly from the employment point of view.

The second paper, on 'The Nature of Intelligence' by Professor G. Wilson Shaffer, is a highly concentrated but comprehensive and authoritative review of the psychological theories on the nature of intelligence from the time of Ebbinghaus to the present day.

The third paper, by Doctor Janet B. Hardy on 'Perinatal Factors and Intelligence', is a masterly study of the role of these factors in the causation of neurological and intellectual deficits. The Johns Hopkins Collaborative Project is presented as part of the survey of all work done in this very interesting and important field. The result is a most informative and comprehensive discussion which relates the authors' research work very lucidly to the present state of knowledge, orientation, and research in this field.

The fourth paper, by Professor Austin Riesen, is an essay in the design of experimental studies to elucidate problems of general biological interest within the field of subnormality. He sets out to test the hypotheses that organic growth yields behavioural growth; that behaviour is dependent upon stimulation for development; that changes in neural structure occur following behavioural development or arrest, and finally that low functional levels induce irreversible cell atrophy. He tests these hypotheses by a study of the responses of early deprivation of visual stimulation and shows how this

affects responses to visual stimuli, particularly in learning situations and also the effect that this has on the permanent structure of the neurons of the retina.

The fifth paper, on the 'Induced Mental and Social Deficits of Rhesus Monkeys' by Professor Harry F. Harlow and Dr. Gary Griffin, gives some details of Harlow's well-known and very important work on social development and personality structure in rhesus monkeys in response to variations in infantile experience and upbringing. Relevant material of great interest and importance to the study of human mental defect is presented, particularly on the effect of social isolation on the learning potential and personality development of the young rhesus monkeys. The defect in communication in some of these monkeys has particular relevance to the aetiology and symptomatology of severe early psychosis in children. It is a pity that the style in which this paper is written is more suitable for a lecture than for publication, and the humorous remarks and some overbroad generalization seem to clash, not only with the general tone of the book, but also with the very important and interesting scientific data presented in this paper.

The next paper, by Professor David Seaman on the 'Learning Processes of the Mentally Retarded', concerns the use of experimental methods. He uses a mathematical approach which he has devised and employs this to set up a theoretical model for the learning processes particularly with relation to attention, to transfer operations and to reinforcements. The paper is rather full of recondite professional jargon, which is in striking contrast to the last one by Professor Samuel A. Kirk on 'Diagnostic, Cultural and Remedial Factors in Mental Retardation', in which he very lucidly and rapidly examines the approach of educationists to the problems of remedial teaching and describes the effect of pre-school education on intelligence. He shows how pre-school education can improve the development of intelligence, particularly in children living under unfavourable circumstances. He then describes the Illinois Test of Psycholinguistic Abilities, a test used for determining specific deficits that a child might suffer from, and its use in choosing the type of remedial education that would best meet the needs of the handicapped child.

Some of these papers are general reviews, others deal in depth with narrow and specialised problems. The variation in approach and lack of cohesion between the papers militates against its being used as a text book for the student, except possibly as a source book of methods and treatment of some of the problems met in the field. As a collection of essays it is of great interest to the professional worker and is as stimulating as it is informative. The Johns Hopkins University School of Medicine should be congratulated in setting such a standard for its post-graduate students.

A. SHAPIRO

Social Learning and its Measurement. M. L. KELLMER PRINGLE. Longmans Green, London, 1966, pp. vii + 100, 12s. 6d.

This report on the use of Doll's Vineland Maturity Scale should stimulate interest in a technique which reached this country some twenty years ago. Studies on its reliability and validity and assessments of its practical value have been relatively infrequent, and have usually been carried out with selected samples of children, for instance, with behaviour problems or those living in deprived environments. The result of Dr. Kellmer Pringle's study with normal children is likely to send psychologists and educationalists back to the test to investigate its practical usefulness for themselves.

The author stresses the importance of the concept of social maturity, stating that "the satisfactory adjustment of a human being depends upon the adequacy with which he meets the growth tasks set by the culture and by the group in which he finds himself" (p. 2). Ability to assess this is therefore of importance; hence her examination of the scale, which appears to measure one aspect, namely social competence, or 'social know-how'. The main aims were to find out whether social competence is distinct from intelligence, and whether the Vineland Scale, by number and variety of tasks, can adequately cover the life range of the maturing individual (up to 25 years of life).

For what seems to be the first stage of a more extended study, she selected a sample of 200 children aged 6-8 years, drawn randomly from schools in four different types of area, rural/metropolitan and working class/professional. In this way the effects of socio-economic and cultural background on social competence could be ascertained. To these children she gave the Revised Stanford-Binet

1937 Revision, Burt's Graded Vocabulary Test, the Vineland Scale and an interview. Teachers' ratings on ability, attainment and some temperamental qualities were also obtained. All these measures were again applied to 50 Child Guidance clinic cases.

From this total sample three children were chosen at each age and from each area, one whose I.Q. and S.Q. were nearest the respective means, and two showing the largest discrepancy between the two measures—one where the I.Q. was the higher and one where the S.Q. was higher. In this way thirty 'normal' and 'abnormal' children were chosen for more intensive study by means of a home visit and an interview with the teacher.

Dr. Kellmer Pringle's results indicate that social competence can be assessed at this age band, and that it is relatively distinct from intelligence, the mean correlation between the two being 0.48, partial correlation 0.34 ($n = 200$). The child's home background in terms of socio-economic and cultural differences does not appear to influence the development of these social skills, thus confirming Doll's claim that social maturity is independent of class or social group.

Discrepancies between I.Q. and S.Q. of one or more standard units, however, point to further investigation, for children markedly accelerated and markedly retarded in social competence appear to come from psychologically unfavourable homes. As one might expect, Child Guidance cases showed a lower mean S.Q. than the normal group.

Dr. Kellmer Pringle used the children themselves as informants, although in Doll's version it is an adult connected with the child who supplies the information. She states that only in three instances among the intensively studied group were there any differences in data supplied by the mothers, and in all cases the mothers were unstable. It would, however, be interesting to know how far the child's level of intelligence is likely to affect the validity of his testimony, particularly at this age. Again, one would like to know more about the incidence of +0 (no opportunity) items. She mentions, too, that in some cases, e.g. in the Child Guidance sample, information given by the teachers and mothers was at variance. Which contributed to the score? And the numbers of Child Guidance cases in the group selected for special study are small, though the scores on the Vineland did indeed pick out the most difficult cases.

However, this report does whet our appetite for the results of an extended study, which she hints may be under way. No clinical tool can be disregarded and the evidence here appears to suggest that in the hands of a psychologist the scale can be satisfactorily used even with children as young as 6 and 7 years.

GERTRUDE KEIR

Early Childhood Disturbances, The Infantile Neurosis, and the Adulthood Disturbances.

HUMBERTO NAGERA. International Universities Press, New York, 1966, pp. ix + 95. 27s.

PSYCHO-ANALYSTS are often accused of vagueness, of establishing all-embracing theories which cannot be validated or invalidated. Another criticism is that they make human behaviour appear so complicated. Theories based on the behaviour of rats in mazes have at least the virtue of simplicity.

Dr. Nagera is perhaps guilty of the second offence, since this book, though containing only 84 pages of text, is complex and closely reasoned, though in the reviewer's opinion no more so than the subject demands. He cannot, however, be accused of the first criticism. His book is almost entirely devoted to theory, but the hypotheses that he puts forward are essentially testable and could be proved or disproved by clinical investigation.

The book was presumably written primarily for psycho-analysts and as such it contains a good deal of jargon. Although Dr. Nagera is careful to define his terms, some readers will inevitably misunderstand him since words like 'superego' and 'oedipus complex' have acquired different meanings among different analytical schools. The book clearly stems from the Hampstead Clinic and from the laudable attempt made there to classify the emotional disturbances of childhood according to a developmental scheme or profile. Some familiarity with this conceptual framework is necessary for the proper understanding of Dr. Nagera's thesis.

He argues that although two children may present very similar symptomatology, which may loosely be called "neurotic", their underlying psychopathology may be very different and that the prognosis, even if analysis is undertaken, will depend on the age at which the initial "developmental

interference" was experienced by the child. Dr. Nagera reserves the term "neurosis" for those emotional disturbances which can be traced to interferences experienced by the child at the time of the "infantile neurosis" as defined by Freud; the oedipal conflict which was thought by him to be inevitable in the life of every child and to be the "nuclear complex" of every neurosis in later life. Developmental interferences occurring before this stage has been reached (the so-called "phallic" stage of emotional development) are not regarded by Dr. Nagera as giving rise to 'true' neurosis. Although such personality disorders may have a very similar symptomatology to the neuroses he believes that the prognosis, even with analytical treatment, is quite different.

This ought to be a testable hypothesis. The difficulty is that other schools of analytical thought place less emphasis on the inevitability of the 'infantile neurosis', or alternatively, while acknowledging its importance, place it very much earlier in a child's emotional development than the classical "phallic" phase as defined by Freud.

Despite this, the reviewer believes that Dr. Nagera's thesis is testable if the terms that he defines are accepted and that this book could form the basis of future investigation.

H. M. HOLDEN

Speech Therapy and the Bobath approach to Cerebral Palsy. M. C. CRICKMAY. C. C.

Thomas, Illinois, 1966, pp. ix + 177. \$7.50.

THE AUTHOR is to be congratulated on being the first to attempt a full-length book on the work of these two dedicated people. Dr. and Mrs. Bobath's approach to cerebral palsy has received wide recognition here and overseas. It is practised more and more as increasing numbers of physiotherapists and speech therapists undertake the training devised by them.

The book offers a brief general survey of the problem of cerebral palsy, before introducing, in short but detailed sections, the Bobath technique. We see how the patients' abnormal reflex activity must be broken up by specialized manipulation and reflex inhibiting postures (some of which are aptly illustrated), and the patient prepared for the facilitation of normal automatic movement leading to the development of voluntary and self-controlled motor behaviour. Success depends upon the co-ordinated efforts of the physiotherapist, occupational therapist, and speech therapist, working together as a team.

The book is written by a speech therapist with a dual purpose. It outlines the principles of Bobath therapy but the major part shows its relation to the speech therapists' role in the training of the cerebral palsied child, and also the development of motor behaviour and speech in the normal child. The illustrations in this section look deceptively simple, but the uninitiated should be wary of attempting the positionings of a cerebral palsied patient as shown, without first learning how they may be achieved. The construction of the book is a little unbalanced—the chapters on speech therapy are overloaded with references and redundant phrases which detract from the initial purpose of describing the Bobath technique used to relate speech to physical therapy. However, students and therapists of all related disciplines should find this a stimulating introduction to a very specialised treatment of cerebral palsy and should be encouraged to find out more about it.

PATRICIA R. LANGUTH

Psychotherapy and Child Development. JEAN BIGGAR. Tavistock Publications Ltd, London,

1966, pp. xiii + 142, 25s.

THIS book is based on a selection from lectures given mostly at the Davidson Clinic Summer Schools in Edinburgh over fifteen years, attended by doctors, ministers, teachers, social workers and parents. It gives a vivid impression of a strong-minded, sincere woman with real warmth and feeling for patients. Her clinical examples are particularly well selected and the style is clear and uncluttered. The lectures must have been a pleasure to their audiences and one can well understand the wish to commemorate a popular lecturer, clinician and teacher.

Unfortunately, lectures do not always transfer well to print. Too often in this book the simplifica-

tion which sounds convincing in the lecture room is revealed in print as the over-simplification which misleads. Too often the authoritative tone is seen to cover up misunderstanding and lack of information about the work of others in the field. An early example of this appears on Page 10: "... what kinds of patients are suitable for treatment by analysis. The most important requisite is that the patient be able to form a transference relationship with the doctor. If the patient is unable to do this, he does not feel anything about the doctor, and what the doctor says to him doesn't affect him. There is no relationship, no experience, no possibility of cure. All neurotic patients and normal people readily enter into the transference relationship. Only those patients who are insane are unable to do so."

The error of putting these lectures into print in their present form is compounded by the subtitle "An Introduction for Students". Serious students of psychotherapy might be more encouraged if they knew it was their teachers' "chief aim to make no sacrifice to an appearance of being simple, complete or rounded off, not to disguise problems and not to deny the existence of gaps and uncertainties" (Freud: Preface to the New Introductory Lectures, 1932).

J. BOLLAND

Cultural Factors in Delinquency. Edited by T. C. N. GIBBENS and R. H. AHRENFELDT. Tavistock Publications, London, 1966, pp. 201. 35s.

THE editors have used the material presented at a conference in Topeka to produce a readable and instructive survey of many recent researches on the cultural determinants of crime. The first chapter draws attention to the time-lag between the appearance (or disappearance) of social problems and the enactment (or repeal) of legal proscriptions. Much of the variation in emphasis in the penal codes of different states depends upon whether the original concern of the legislators was to protect their economic system or to preserve concepts of morality. Nowadays, marital infidelity, abortion, prostitution, homosexuality, suicide and the use of intoxicants give rise to particularly ambivalent and contradictory legislation. Even the more classic crimes of dishonesty vary in status and punishment according to such circumstances as whether the offender is a juvenile, or whether the victim is an individual or an impersonal organization such as a taxation authority. In England, a youth who takes a car may be charged merely with driving it without the owner's consent, but one who makes a telephone call without paying may incur a charge of theft of electricity. Small persistent debts may lead to imprisonment, whereas large ones are otherwise dealt with by the bankruptcy courts.

The special contribution to crime of certain age groups raises some interesting issues. In most places, the greatest increase in incidence of convictions in recent years has been in the age group 15 to 20. The tendency of delinquents to drop out of the penal statistics as they become older than this probably represents a real improvement, not merely a greater circumspection in committing offences. Confidential interviews with army recruits have lent some support to this view. In commercialized Western cultures, the tendency towards artificial differentiation of a teenage group with special interests and requirements has probably encouraged oppositional sub-cultures devoted to eccentricity, a search for illicit excitements, and the veneration of violence. In individuals reared by consistent, and affectionate parents, a powerful internalized system of self-control seems to be built up during the first five years of life which may be supported or eroded at adolescence by the influence of the peer culture.

Comparisons between the criminal statistics of different countries produce startling contrasts. The incidence of sex crimes is high where homicidal assaults are few, and vice versa. In places like Hong Kong, Burma, and Egypt, narcotic offences are as common, or almost as common, as larceny. In the chapter on the "world situation" some special problems are described under the headings of the countries particularly affected. In Canada, for instance, it is said that many youthful offenders are caught up, sometimes without knowing it, in an increasingly widespread system of well-organized profiteering rackets. In Colombia, the scene is dominated by homicidal violence of political origin in which whole villages become victims of reprisals or counter-reprisals by bands of murderers. In Israel, among the many offspring of immigrants, the conflict between parental norms and expectations learned from outside the home all too often leads to identification with delinquent groups.

A concluding note by Otto Klineberg points out that most of the studies cited assume that delinquent behaviour is learned from patterns already present in the social environment, which are taken

over for the purpose of personal advancement or gratification. Stress has been laid on the kinds of patterns adopted and how they are learned, but the motivations behind such learning are equally important. On this final point, as on most of the issues raised, this book opens up many questions, without providing any certain or simple answers.

D. J. WEST

Deviant Children Grown Up. LEF N. ROBINS. Williams & Wilkins, Baltimore, 1966, Livingstone, Edinburgh, 92s. or 68s. (paperback).

A sound knowledge of the long-term course of child psychiatric disorder is indispensable for any adequate theory concerning the psychopathology of childhood. This report by Dr. Robins of her social and psychiatric follow-up study, carried out with Dr. Patricia O'Neal, of 500 or so children who attended an American child guidance clinic between 1924 and 1929, goes a very long way towards filling what has hitherto been a serious gap in our understanding. Professor Eisenberg's claim in the introduction that the study constitutes a landmark in psychiatry is fully justified. It is clearly destined to become a classic and the book is required reading for anyone concerned with psychiatric disorder in children.

The clinic children—now in middle life—are compared with a carefully matched group of one hundred 'normal' children living in the same parts of the city (St. Louis). Ingenuity and industry were rewarded by a 90 per cent success in tracking down the children 30 years after their clinic attendance. The study is a model, both in terms of the care used in planning and execution and also in the thought which has gone into the data analysis and interpretation of findings.

Robins shows that, for the most part, neurotic children become fairly well-adjusted adults. Anxiety neurosis and manic depressive disorder in adult life were just as likely to be found in the control group as in those who had been psychiatric patients as children. Schizophrenia was slightly more common in the patient group but it was not associated with any clear pattern of childhood disorder, except that those destined to become schizophrenic tended to have both antisocial and neurotic symptoms.

Most of the book is concerned with the antisocial children, with special reference to the development of 'sociopathic personality', a term precisely defined by the author. The outcome of the antisocial children was generally poor; 28 per cent were diagnosed as sociopaths and the most striking feature was the very wide range of disturbance they showed in adult life. They exhibited very substantially increased rates of divorce, unemployment, financial dependency, social isolation, alcoholism and psychiatric referral. In addition they had a high rate of neurotic and somatic symptoms and rather poor physical health. Social deviance appeared to be a unitary phenomenon affecting all areas of life. Social factors did not influence outcome and the slum child who was a member of a delinquent gang was just as likely to become a sociopath as the middle-class child who committed solitary crimes. The study offers no support for the concept of 'socialized delinquency'. However, it does provide evidence for the importance of the father in the child's development—sociopathy in the father affected the child's prognosis, while sociopathy in the mother did not.

The trouble did not end with the antisocial child becoming a sociopathic adult. Sociopaths tended to marry spouses who themselves had psychiatric problems. Their children also had a high rate of problem behaviour and frequently had to be taken into care. A formidable problem in preventive psychiatry! The group who most require our help are the ones who least often get it and for whom our treatment is probably least effective.

These are just a few of the provocative findings from this very important study. Of course, more questions are raised than answers provided. How similar are the clinic children of today to those of 1924 in St. Louis? How do the antisocial children referred to psychiatrists compare with the delinquents who are not referred? What are the characteristics of sociopaths who are not seen at psychiatric clinics in childhood? But these are for other investigations. In the meanwhile, the present book warrants careful study. It is expensive (the paperback is 68s.) but even at that price it is a most worthwhile investment.

MICHAEL RUTTER

11,000 Seven-year-olds. M. L. KELLMER PRINGLE, N. R. BUTLER and R. DAVIS. Longmans, London, 1966, pp. xv + 246. 21s.

THE LIVES of 17,000 children born in March 3-9 1958 are being followed in the National Child Development Study, of which this is a report. The value of this study is in providing normative data from a large representative sample. Those who want to know the incidence of headaches, enuresis, snoring and stammering, what proportion walk by age 18 months and talk by age 2 years, will look to this Study for authoritative figures.

The present report was prepared for the Plowden Committee. To meet their requirements, "analysis of the data had to commence before information on all the children had come in" (p. xvii). Hence the reduction in numbers to the 11,000 of the title. But forty-four of the tables refer to 7,985 cases, and twenty-three to numbers between 7,970 and 7,986. Three are on numbers in the range 10,596 to 10,833. The remainder vary from 7,916 to 4,917.

For children of this age the educational data are inevitably limited. The reading test used was too easy: 41 per cent scored within two points of the maximum possible. The arithmetic assessment is based on ten items, and ability was assessed by teacher's ratings. None of these data gives a firm baseline for comparison with other studies.

The question which must be asked is whether surveys on this scale can provide more useful information than smaller studies using sophisticated sampling techniques. The reading surveys of the Department of Education and Science, for example, based on smaller carefully selected samples, may represent a better investment of research funds.

The main difficulty in preparing this report was the deadline set by publication of the Plowden Report. If more time had been available, more complete coverage would have been possible. "This report is inevitably very much of an interim nature", says the Foreword. In time we expect a report which will be of interest and value.

JOHN NISBET

Standards and Progress in Reading. JOYCE M. MORRIS. National Foundation for Educational

Research in England and Wales, Slough, 1966, pp. xxxiv + 493. 50s.

THIS book should be of immense value in dispelling any complacency which may have resulted from successive surveys carried out for the Department of Education and Science, as to the reading achievements of school children. It is true that Dr. Morris found the reading standard to have improved somewhat since she carried out her first enquiry into reading ability in Kent schools. Nevertheless, in the survey described in this book, of about 2,000 junior school children of 9 years and upwards, 1 per cent were found to be illiterate and semi-literate, and a further 15 per cent severely backward. And she estimated that 7 per cent were likely to remain very inadequate readers for the rest of their lives.

Dr. Morris is of the opinion that these reading difficulties were due to a multiplicity of factors, some characteristic of the child himself, and some arising from the home and school environment. Indeed, she argues that the greater the number of such predisposing factors, the more likely is the child's reading achievement to suffer, and the more difficult it is for him to make progress. After conducting the general survey of reading achievement in the Kent schools, Dr. Morris carried out more intensive testing and observations of behaviour and of home and school characteristics, firstly in ten schools where achievement was considerably above or below the average; and secondly in about 100 especially good and 100 especially poor readers in these schools. The latter were on the whole below average in intelligence, exhibited more speech defects and showed more signs of maladjustment. In particular, there was more aggression, emotional tension and withdrawal; though it is impossible to say if these were the cause or the result of reading difficulties. Their homes were below average in socio-economic status; but what seemed more important was the lack of parental encouragement given them. Their schools were poor in amenities and in supplies of books and ancillary material. But again the human factor was more important; the degree of enthusiasm, leadership and organizing ability of the head teacher, and of skill in the reading teachers. Whether phonic or sight methods of teaching reading were used appeared to be of minor importance. But the teachers who taught the poorer readers were significantly less experienced and less efficient as teachers than were those who taught the better readers. In fact, the former seem to have had little understanding as to

how to discover the nature of the children's difficulties in reading, or how to remedy these. In none of the ten schools studied intensively does there appear to have been any systematic provision of remedial teaching in special classes; and a strong recommendation is made that this should be available in future whenever advisable.

The book provides an admirable survey of the general conditions and short-comings in the teaching of reading. Indeed, it should have been published much sooner after the conclusion of the survey in 1957, in order that its recommendations could have been speedily adopted. Although sometimes the very multiplicity of data makes it a little difficult to ascertain the nature and source of the evidence, the book does give a very comprehensive picture of the general circumstances in which children find it easy or difficult to learn to read. But it throws little light on the fundamental nature and causes of reading disability; and indeed it is probable that only intensive clinical studies can do this satisfactorily. The suggestion appears to be that children who lack the motivation of interest and parental encouragement are unable to surmount the confusion created by indifferent teaching. Hence they are generally retarded in arithmetic, as well as in reading. But this does not explain why many children handicapped by these circumstances do in fact learn to read; and why others, not so handicapped, do not. Moreover, although diagnostic tests of reading errors and failures were carried out with the poor readers, which indicated poor capacity for the analysis and synthesis of words, the tests did little to elucidate the cause of these failures. Further testing of poor readers for general incapacity in visual and auditory perceptual analysis and memory, linguistic retardation, lack of spatial appreciation (especially directional confusion), might have demonstrated whether there was some inherent disability which particularly affected reading. And some evidence on cortical impairment and hereditary disposition might have indicated its cause. Unless such testing gives negative results, the absence of dyslexia cannot be inferred simply from the fact that even the worst readers, as Dr. Morris claimed, made some progress during the 3-year period of observation. Dyslexia resulting from maturational delay does sometimes improve around the age of 10 years. But it is seldom entirely overcome; and the finding that 7 per cent of the children probably never learnt to read efficiently suggests that at least some of them were dyslexic.

However, it is perhaps unfair to criticize this book for failing to provide an explanation of the nature and causes of severe reading backwardness, since it does not set out to do this. Rather, Dr. Morris must be congratulated on the perspicacity and thoroughness with which she carried out her testing, observations and enquiries. She has admirably achieved her main purpose, to discover the principal conditions which cause children unnecessary difficulty in learning to read, and which are within the competence of the educational system to remedy; namely, poor schools, inadequate supplies of books and inefficient teaching. Of course some teachers are by nature more efficient than others; but it would seem that all teachers of younger junior school children need training and experience in the best methods of assisting the very considerable number of children who have not acquired the basic processes of reading in the infant school.

M. D. VERNON

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PSYCHOLOGICAL STUDIES OF CREATIVITY*

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INTRODUCTION

PSYCHOLOGISTS have long been interested in the nature of creative production and in the psychological characteristics of the creative individual—the artist, the writer or the inventive scientist. But in the past 10 years or so creativity has become, to quote Hudson's (1966) apt description, "A boom in the American psychological industry only paralleled by that of programmed learning", and hundreds of publications have appeared dealing with the topic from many different angles. Doubtless there are many reasons for this present craze, one of the strongest being the advent of Sputnik, and the consequent anxiety among Americans that they are not producing sufficient original scientists to maintain their technological lead over Soviet Russia. But in addition to this utilitarian or nationalistic motive, there is widespread dissatisfaction among progressive educationists, in Europe as well as in America, with many features of our educational system and with our ideals of child-rearing. The present system is criticized for favouring the conformist mentality—the pupil or student who is good at accepting and learning what his teachers and lecturers tell him, and thinking and writing along conventional lines; whereas it discourages spontaneous, independent thought among those children who might make future original contributions to the arts, sciences and technologies. Parents likewise, it is said, from the earliest years want to bring up their children to a conventional pattern, and peer-group pressures in the primary school, still more during adolescence, penalize the non-conformist, the individual whose ideas or behaviour are different from those of the majority.

Many people too are dissatisfied with the extent to which educational and vocational advancement have come to be dominated by examinations and tests. In England the 11+, GCE and the 18+ inhibit progressive educational ideas, while in America the multiple-choice achievement test and the I.Q. group test are even more sinister, since they give no scope whatever for the student to produce his own thoughts. Guilford (1951-56), who has made extensive studies of the abilities of high-grade persons—graduate students, army officers, etc.—points out that almost all our tests are convergent in the sense that for each item there is one correct, pre-determined answer; whereas surely the essence of creative thought is that it issues in a variety of new answers, in other words it is divergent. Hence, Guilford, as much as anybody, has been responsible for the flood of work on so-called creativity tests which, it is hoped, will overcome the deadening influence of assessing the growing generation for conformity.

*A paper read to the Association for Child Psychology and Psychiatry, London, 12th July, 1967.

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Now one of the troubles about creativity research is that it is approached from so many different viewpoints, and that there is so little connection between them. One group discusses it as a form of restitution for destructive impulses, whereas to another group it is a statistical factor which may or may not be related to intelligence. Golann (1963) has distinguished the following four major areas:

- (i) Emphasis on the product—the creative work or invention.
- (ii) Emphasis on process—how does the product come about?
- (iii) Emphasis on measurement of creative abilities.
- (iv) Emphasis on personality and motivation of the creative individual. And one might add a fifth approach: Emphasis on education and child-rearing which inhibit or stimulate creativity.

EMPHASIS ON PRODUCT

This would seem to be more a matter of aesthetic criticism or technological evaluation than of psychology, hence it need not detain us long. Many, of course, have tried to define creative production in some such terms as a new combination of familiar elements, but this does not help to explain why some new combinations of visual, auditory or verbal stimuli have an overwhelming emotional impact on people, others don't; nor why some works of art are appreciated or rejected at the time, others by later generations. The present writer would hold that it is more fruitful to study the psychology of those persons who appreciate or value the artistic product than to persist in attempts to arrive at general aesthetic principles or criteria for deciding what is or is not a work of art. Even in the case of science and invention, where it is easier to judge that some insights are more seminal than others either for theoretical advance or for their practical utility, it is notorious that the value of original contributions is often not recognized at the time.

EMPHASIS ON PROCESS

The artist himself often claims that any attempts to analyse his powers of creation would destroy them; inspiration is a gift of God. Part of the writer's Ph.D. work (Vernon, 1931) was based on collecting statements made by great composers about their processes of composition, and they were astonishingly vague. Thus Elgar claimed: "There is music in the air, music all around us, and you take as much of it as you want". Some mathematicians and scientists have been more helpful, Poincaré for example; and Graham Wallas's (1926) description of the four stages of creative thinking is familiar: (i) preparation or saturation with the problem; (ii) incubation or subconscious cerebration; (iii) inspiration or illumination, and finally, (iv) verification or working out. In F. C. Bartlett's (1958) book on *Thinking*, there is an interesting account of the emergence of his own creative ideas on memory, showing how long drawn out and ramifying the process may be. Yet at the same time there are striking resemblances to the relatively simple processes of psychomotor learning. In acquiring a complex skill we first practice the elementary operations (i.e. preparation) and are then apt to enter a plateau, a period of no progress (i.e. incubation) during which the lower-order habits become integrated. Eventually we emerge at a new level of progress; a higher-order pattern has been created.

Some further light is thrown by the experiments on problem-solving described

by the Gestalt psychologists, Wertheimer and Duncker (1945), and the work of Maier (1930). Among the points they emphasize are the need to analyse the situation thoroughly to discover the crucial elements and relations. Then there is the process of reorganizing the field or seeing the relevant factors in a new way, much as Köhler's ape grasped a new relation between a branch of a tree and reaching for food. Often this insight is blocked because of over-rigid or fixed concepts, and there may be positive or negative transfer from experience with other similar problems. The motivational aspect is important also; tensions are set up by the difficulties of the problem, which become resolved as the reorganization is grasped.

EMPHASIS ON MEASUREMENT

In the second volume of Terman's *Genetic Studies of Genius*, he and Cox (1926) studied biographies of numerous eminent figures from history, and estimated their I.Q.'s as best they could from recorded intellectual achievements of childhood. While some of these outstanding artists, writers and scientists were credited with I.Q.'s ranging up to 200, and the average was over 130, there were quite a few in the more normal 110 to 130 range; and this led Terman to conclude that genius is certainly not a matter of high I.Q. alone but depends to a greater extent on personality characteristics. Many subsequent writers, such as Roe (1953) and MacKinnon (1960), who have studied talented living scientists or artists, have reached a similar conclusion. That is: the highly creative tend to be superior in intelligence as measured by conventional tests, though not necessarily very superior; and there are a great many people with high I.Q.'s who are not particularly creative. Similarly, in this country, Hudson (1966), working mainly with clever boys in independent schools and undergraduates, finds that intelligence tests fail completely to differentiate the outstandingly promising and original student from the able but more ordinary student.

Now ever since testing started near the end of the 19th century, there have been tests designed to elicit imaginative qualities, for example the various inkblot tests, culminating in the Rorschach, and tests of fluency such as writing down as many words as possible beginning with P, or as many names of animals as possible, in 2 minutes. Thurstone (1938) and other factor analysts have shown that these fluency abilities involve factors which are largely distinct from other recognized factors of intelligence. Guilford (1951-56) took over these tests and added others which appeared to call either for flexibility of thinking or for originality, and which depended more on quality than mere quantity of ideas. For example: write down as many different uses as you can think of for a brick or a newspaper; this is scored for the number of different categories of ideas, not just total suggestions. In the test called Consequences one may be asked: what would happen if everyone in the world suddenly doubled in height? Write down as many consequences as possible. This can be scored for unusualness or rarity of suggestions. In other tests the cleverness of the responses was assessed, and it was proved that this could be done with reasonable reliability. Guilford (1951-56) found that, in his high-grade populations, several factors of flexibility, divergent thinking and originality could be isolated which were quite uncorrelated with the abilities measured by convergent tests. Indeed some

multiple-choice tests demanding predetermined responses actually correlate slightly negatively with originality.

Later workers, particularly Torrance (1962) at Minnesota and Getzels and Jackson (1962) at Chicago, have adapted these tests for children or devised others based on drawings, toys, or making up stories. Getzels's investigation has been so widely publicized that a brief description will suffice. He and Jackson compared 26 high school pupils who were in the top 20 per cent on a battery of divergent tests but not outstanding on ordinary convergent group tests, with 26 others who were specially high in I.Q. but lower in divergent thinking. The two groups were found to be almost equally good in school attainment, and this appears to contradict the claim that creative individuals do not do as well in the conventional school system as conformists. But as both groups happened to be very superior—even the low-I.Q. group averaging 127—this finding probably has no general significance. The so-called high-creativity group did show less conventional attitudes and aspirations, and did better on various tests of free expression. Interestingly, also, they were rated lower on desirable personality traits by teachers and were less popular among their peers. The implication is then that creative students will tend to be discriminated against not only by formal tests and exams but also because their teachers and fellows dislike their unconventionality.

However, this investigation showed numerous weaknesses. The samples of children were too small and atypical to tell us much about the relative value of the old and new tests, and the old tests consisted of various group intelligence tests, applied at various times in previous years, so the scales were weighted against them. The correlations between I.Q. and the divergent tests were around 0.3, or to quote the authors' more tendentious conclusion—had the pupils been selected by I.Q., 70 per cent of those with high creativity would have been missed. However, the correlations among the divergent tests themselves were generally low, meaning that it is doubtful whether they were really measuring a consistent ability distinct from *g* and verbal ability. We are not really entitled to talk of an ability such as divergent thinking as an entity unless we can first prove that there are considerable correlations among several divergent tests which cannot be accounted for by the dependence of these tests on such well-established factors as *g* and *V* (cf. Burt, 1962). Had the authors used a good all-round measure of intelligence like the Terman-Merrill, where the child produces most of his response in his own words instead of by ticking multiple-choice alternatives, it seems even less likely that a distinctive divergent-thinking factor would emerge.

However, Torrance (1962) claims to have carried out 8 further studies similar to Getzels's on various school populations and generally to have confirmed his findings. Other researches contradict this. When Hasan and Butcher (1967) applied divergent thinking and verbal reasoning tests to an average group of 12-yr-old Scottish pupils, the correlation between the two was as high as 0.74. The high-creative pupils in this investigation did not, like Getzels's, obtain as high attainment scores as the high-I.Q. group, and though they were rated lower by their teachers in desirability of personality, the authors suggests that this was due simply to their being lower in I.Q. and attainment, not because the teachers disliked their unconventionality. Another recent study is that by Wallach and Kogan (1965), who consider

Torrance's tests too heterogeneous and too test-like to stimulate truly creative thinking. They set out to obtain abundant ideas and associations under untrammelled, play-like, conditions. Thus, they set tasks like "possible uses for a shoe" or possible meanings for various abstract designs, without time limit, and individually. These they scored for total number of associations and for numbers of unique associations, i.e. those not given by other children. The resulting measures did intercorrelate highly and were relatively independent of verbal intelligence, and they revealed a number of interesting intellectual and personality differences between groups who were high or low on the creative or on the intelligence tests, or both.

Independently, the present writer (Vernon, 1967) had arrived at a somewhat similar conclusion, namely that the question whether divergent thinking abilities are part of, or distinct from, what is measured by intelligence tests depends more on the form of the tests, the way they are given and scored, than on their apparent creative or non-creative content. He has given a short battery of divergent tests individually to several groups of 11-yr-olds and finds that, when these are scored simply for numbers of associations regardless of quality, the *g* and *v* saturations are low enough to justify recognizing one or more fluency factors. And if one then takes the *proportion* of responses which are unusual, imaginative or unconventional, not the total number of such responses, they do yield yet another rather small but distinctive originality factor.

Having established this basic point, we still have to ask how valid are the divergent thinking tests; do they really enable us to predict anything about the educational and vocational promise of school pupils, students or adults? So far there has been little if any attempt to follow up students who did well on creativity tests to see whether they became productive writers, artists or scientists, and this would be very difficult to do since, as Taylor (1962) has pointed out, it is difficult to agree on a criterion. Taylor assessed a group of research scientists on a large number of possible indices, such as ratings by employers or supervisors and co-workers, number and quality of publications, membership of societies, etc., and found the correlations between these often quite low. When factorized they resolved into at least 7 different kinds of creativity or productivity. One can imagine a similar state of chaos if we gave creativity tests at 11+ or at 18+ and then tried to validate them by asking secondary teachers, university tutors, or peers, to assess the pupils' or students' creativeness in the arts or sciences.

However, some really impressive studies have been carried out by MacKinnon (1960) and his colleagues at Berkeley, California, where they obtained the co-operation of considerable groups of writers, architects, physicists, engineers and inventors to come and be tested and interviewed for 3-day periods. On the basis of expert opinion they chose some who were recognized as outstandingly creative, and others who—though well-established in their professions—did more pedestrian, unoriginal work. MacKinnon gave Guilford's divergent thinking, along with a number of other ability tests, and found scarcely any differences on them between the more and less creative. A word association test showed some promise when it was scored, not for numbers of very rare or bizarre associations, but for moderately unconventional associations. The best test was the Barron-Welsh (1952) Art test, based on preference for a series of abstract designs. The high creatives were consider-

ably more apt to prefer complex, asymmetrical drawings, the non-creatives more conventional and symmetrical drawings. Although, as I mentioned earlier, creatives were not particularly outstanding on tests of the intelligence type, creative writers did on average score particularly highly on verbal ability tests, and physicists and engineers on tests of spatial abilities.

The conclusion seems clear then that, just because a test is of the divergent type, or appears to involve unconventional, imaginative responses, it certainly cannot be regarded as a test of creativity in the generally accepted sense; and it is quite misleading therefore to label such tests creativity tests. The same point is stressed by Hudson (1966) who presents some of the most interesting work on divergence and creativeness in the U.K. He started from the point that, although the scores of schoolboys and students on intelligence tests were non-diagnostic, yet those who were studying different specialities in the arts and sciences did tend to produce different patterns of scores on different types of tests. In other words, tests could be used to predict the type or bias, though not the level, of future intellectual performance. In particular, Hudson contrasted scores on the AH5 convergent verbal and non-verbal test with scores on two divergent tests—a multiple definition vocabulary, and Guilford's Unusual Uses tests, and found that science students were generally apt to be convergers, arts students divergers. Naturally there were also a number of exceptions, good or poor all-rounders on both kinds of tests. He goes on to show that convergers and divergers differ in many ways in their personalities, work and interests, but dissents strongly from the American position that divergent thinking is synonymous with creativity. Indeed, scientists obviously do produce original ideas, though of a different kind and in a different manner from those of writers and artists. He makes a very interesting case for convergence and divergence as being contrasted types of defence mechanism, for coping with people and the environment. Though agreeing with most of this, one doubts whether divergent tests are so closely linked as Hudson suggests with the literary imagination. Other tests, particularly when scored differently, might well favour the scientist, and this is certainly true of the Consequences test scored for proportion of unusual responses. Sultan (1962), working with a grammar school population, found that the scientists showed more acute perception of the possible impact of new inventions or of sudden environmental changes.

We must conclude that the problems of testing for creativity are far more complex than most present investigators realize, and it is unlikely that any battery of the rather trivial divergent tasks such as have been used so far will be able to pick out students, in any and every field of endeavour, whose creative abilities are being ignored or frustrated by current methods of educational assessment. To begin with, we should probably distinguish sharply between creativity in the sciences and in various arts fields. If then we could devise more realistic tests, which really stimulated the interest and inventiveness of students in a particular field, these might be more diagnostic of future promise than intelligence tests or conventional examinations. Thus there is some evidence that planning and carrying out original science projects in the secondary school is related to later research talent in science, though the correlation is probably not high. And it is likely that childhood painting or adolescent poetry are even less reliable as predictors of future creativeness.

One further relevant point: all divergent tests are excessively troublesome to score for quality or originality (as distinct from quantity). It is all very well trying them out in an experimental study, but a very different matter to attempt to apply them on a large scale, say as part of the 18+ selection of students. Specially trained scorers would be needed unless the test was to become just another subjectively marked examination.

EMPHASIS ON PERSONALITY

Here again we find quite a number of apparently discordant views. There is the traditional cliché that genius is akin to insanity, and no doubt a number of examples could be cited which seem to support this—Van Gogh the artist, Schumann the composer, and so on. But probably the layman's stereotype is based more on the rather common tendency among great artists to disregard social conventions, to show unstable emotional behaviour, impulsiveness, sexual licence, and so on. Thus in the field of music one could mention Beethoven, Berlioz, Wagner and many others. Yet at the same time one can readily think of stable, worthy citizens, like Bach and Haydn, who contradict such generalizations.

Modern psychodynamic theories are, of course, much less superficial than this, and important contributions to our understanding of particular works of art or particular artists have been made by Freud (1948), Jung and their followers. The present writer does not feel competent to summarize these except in terms of some such bald statement as that artistic creation is essentially a by-product of repressed or unacceptable impulses, a type of sublimation of a neurosis. This, however, would be denied by others such as Carl Rogers (1954), who claim that creativity is a sign of optimal adjustment, not maladjustment; it emerges in so far as a personality realizes its fullest potentialities and is uninhibited by neurotic tendencies. This might link with the view often expressed by child psychologists that young children are naturally creative and only cease to be so because their education, or the anxieties of becoming socialized, repress them.

Now the trouble with arguments of this kind is that they are so largely verbal; the terms are not operationally definable. Thus, discussions of the relation between neurosis and creativity are not very profitable since they depend too much on what one means by neurosis and by creativity. For example, it would seem very dubious to equate the spontaneous, fresh, playful painting or other productions of young children, with the creative works of the mature artist. Nevertheless, recent work has shown that it is possible to make considerable progress through more empirical studies of the personality make-up and development of creative individuals.

Empirical research does not merely imply giving some standard tests like the MMPI, or getting ratings from acquaintances, and then applying factor analysis or other statistical techniques to the scores. The work of Roe (1953) and MacKinnon (1960), mentioned above, is a good deal more sophisticated. While it does make use of a variety of personality and ability tests, it also tries not to lose sight of the essential wholeness and uniqueness of the individual personality. Roe's work was confined to outstanding scientists—physicists, biologists and social scientists. She applied certain high-level aptitude tests, also Rorschach and TAT, but relied mainly on intensive interviews. The underlying factors seemed to vary considerably in different cases.

For example, the main stimulus seemed to be inspiring teachers in some individuals, or an extension of boyhood hobbies in others. They mostly came from culturally superior homes where there was much emphasis on educational values. But also pretty generally they seem to have shown a sense of inferiority in childhood and young adulthood, or difficulties with personal relations, and were compensating for this by intense concentration on some field of research in which they became outstanding. They showed intense dedication to their work, and a strong desire for recognition, and were driven as it were by the tensions arising out of the questions they wanted to answer. Thus they had become absorbed to the exclusion of most normal human interests, and cared little for inter-personal relations or for conventional opinion.

At MacKinnon's Institute for Personality and Ability Research, some 600 persons in all were studied intensively, many of them the most creative in their various fields, and others who constituted the less creative control groups (MacKinnon, 1960). A few tests in the personality area showed quite good differentiation—firstly, the Allport-Vernon-Lindzey (1960) Study of Values, where the creatives are characteristically high in Aesthetic and Theoretical Values, low in Religious, Economic and Social Values. Secondly, the Strong (1963) Vocational Interest Blank, where they favour occupations like Artist, Scientist, Psychologist, Author, etc., as against Banker, Farmer, Carpenter, Salesman. And thirdly the Myers-Briggs (1957) Inventory which tries to assess a person's Jungian type. This indicated that the creatives are more often introverted than extraverted (though with numerous exceptions) and also more given to intuitive than to sensation-type thinking.

A much fuller picture was obtained by analysing the responses to particular questionnaire and *Q*-sort items and from interviews. The creative individuals were not, in general, particularly emotionally unstable, nor suffering from disabling psychopathology. They did bring up many psychological problems, but showed more than usual candour and insight in describing themselves, more awareness of their emotions. Characteristically on the Strong test they obtained high scores for femininity suggesting that they are more open or sensitive to their feelings and images than the average American male. They are relatively unrepressed in the sense that they have not built up barriers against their own experiences and impulses; thus they are more able to see unusual relationships, and to combine dissociated systems of experience. Because of this openness it could be said, as Rogers (1954) suggests, that they have much more fully realized their potentialities than the non-creative individual.

There is some justification too for the stereotype of unconventionality, not because they are deliberately non-conformist—that is, more characteristic of the pseudo-creative—but because they are independent and have their own system of values. As they are not pre-occupied with making impressions on others, they are more free to be themselves. As Roe (1953) suggested, they have an over-riding belief in their own ideas. But in matters outside their creative work they are often quite conventional—more like business men with briefcases than Bohemians. As regards upbringing, a large proportion of the most creative described themselves as having unhappy childhoods, and indeed in a few cases there were brutal, rejecting fathers. But more typically it seems that these impressions of unhappiness derive from their

unusual sensitivity, and that in fact they tended to come from favourable homes which encouraged their independence and responsibility, their interest in ideas and their persistence. Another enquiry by McCurdy (cf. Ammons, 1962) indicates likewise that the parents of historical geniuses were mostly affectionate and attentive, but apt to over-stimulate them intellectually, to discourage normal childish activities and to shield them from social contacts with other children.

This is necessarily a brief summary, and there is much more still to be published. Admittedly, it does not go far to explain the nature of the motivation or drive that issues in original productions. Also one should correct the impression that MacKinnon believes that all creative individuals fall into a common syndrome or pattern. Naturally there were differences between the groups, e.g. writers and scientists, and MacKinnon frequently stresses the variety of paths that different individuals have followed in reaching their goals. Nevertheless, it would seem that the highly creative can to a large extent be differentiated from the more average in terms of personality characteristics; and at the very least these generalizations help to correct some of the less valid generalizations about creativity which are commonly accepted.

EMPHASIS ON STIMULATION AND TRAINING

Finally, let us consider the case for trying to stimulate or educate people to be more creative, or at least for reducing the pressures that operate at the moment against creativity. Inevitably though this will consist more of queries and controversial opinions than of scientifically based conclusions. American writers such as Torrance (1962) and Taylor (1962) inveigh against the old notion that genius will out, no matter what we do to it, that it even thrives on opposition by the home and school environment rather than needing to be stimulated. To them creative abilities are a series of special skills which are acquired and which can be reinforced, or inhibited, in just the same way as any other skills. In particular they are more likely to flourish in a permissive environment, which rewards signs of independence or unusual ideas, than in an authoritarian one which insists on conformity. Torrance goes so far as to enunciate a series of principles for increasing creativity in children, including the following:

- (i) Respect children's questions, encourage their curiosity and help them to find answers.
- (ii) Respect unusual and imaginative ideas, or artistic and other productions.
- (iii) Provide opportunities for them to experiment and try things out without dampening their enthusiasm by evaluating and criticizing the results.
- (iv) Encourage self-initiated learning, instead of assuming that adults have to provide all the concepts and skills they need to acquire.

A good example of the kind of experiment which indicates that measures of this sort may be effective has been provided recently by Haddon and Lytton (1967). Their work was an extension of the studies by D. E. M. Gardner (1950) of children who had attended relatively informal and progressive infant schools, comparing them with others who had attended more traditional, formal schools. She found that the former were sometimes a bit retarded in formal skills, though at least as good in allround educational attainment, and definitely superior in situations involving resourcefulness, and in social confidence and cooperativeness. Haddon

and Lytton applied 3 non-verbal and 3 verbal tests, yielding a number of scores for divergent thinking, to groups of 11-yr pupils in 2 rather formal schools and 2 more progressive schools. The groups were matched on Verbal Reasoning I.Q.'s. On every score for flexibility, originality, and elaboration of ideas, the informal children were significantly superior to the formal. Moreover, the difference was much more marked among pupils with I.Q.'s above 100 than those below 100, which would, of course, fit in with the notion that creativity is a type of thinking largely distinct from conventional intelligence at the upper levels. The authors point out that the main difference between the two kinds of schools lay not so much in permissiveness as in the encouragement by the informal schools of self-initiated learning, which led to more relaxed, friendly relations among the children, and between children and staff.

In the U.S. more direct efforts are made to teach college students to think creatively and to train school teachers in suitable techniques. To quote one journal: "San José State College (California) has taken the lead with an annual 5-day Creative Education Institute which offers graduate credit. At this Institute, several hundred teachers devise ways to integrate creative methodologies with their respective subject-matter fields." Parnes (1963) goes on to describe a course in creative problem-solving which is running at the University of Buffalo, N.Y. It includes:

- (i) Illustration and discussion of perceptual, emotional and cultural blocks which commonly inhibit creative thinking, e.g. failure to see all the implications of problems, overmuch reliance on authority, fear of failure, etc.
- (ii) The principle of deferred judgement, i.e. encouraging the production of ideas and associations and full play of imagination, but suspending any evaluation or criticism of these ideas.
- (iii) Learning to look at problems from a variety of viewpoints; searching for novel associations and combinations.
- (iv) Training in sensing problems in daily life, or in studies; defining these problems for creative attack, looking for relevant facts and questions that could be asked.
- (v) Developing a list of criteria that can be applied when the time comes to evaluate tentative solutions to problems.

Here also it is claimed that follow-up proves that the course is effective in improving scores on a variety of tests or indices of creative thinking.

At the same time there are critics of this trend in American education, for example Ammons (1962), who cites McCurdy's study as showing that almost all the accepted principles of current child psychology were violated in the upbringing of many of the world's greatest geniuses. Their life-histories certainly do not bear out the necessity for a secure environment, for warm relations with adults, for freedom from anxiety and over-pressure on intellectual achievement, and for plenty of contacts and play with other children of their age, and so on. Is there not some danger then that well-meaning attempts to coddle and reinforce creative abilities may actually have the reverse effect? Perhaps there is something to be said for the obscurantist view that pupils benefit from encouragement and training in persistence at difficult and tedious tasks, in practising intellectual skills and acquiring a wide background of

facts. After all, the creative artist or writer and scientist all need a very high level of technical expertise, both for the preparation stage and the working out or verification stage of their endeavours. If we look again at the geniuses of history, they may have rebelled against formal schooling and conventions, but not many of them would have reached their eminence if they had not undergone considerable training, either within or outside recognized educational establishments.

In the writer's view it would be better to admit that all this work on divergent thinking and creative training is almost wholly irrelevant to the production (or inhibition) of outstanding creative artists, writers, scientists and inventors. Although, of course, there is continuity, it would help to distinguish say the top 0.1 per cent or less of Einsteins and Mozarts, who are right outside the normal distribution of talents, or perhaps the 1 per cent who—though less eminent—nevertheless contribute some artistic or scientific productions of real originality, from the more general run of "gifted" or above-average pupils, students and adults. The writer is certainly in favour of self-initiated learning for the gifted, indeed for all pupils, and would agree that the approaches mentioned above may incorporate some valuable educational ideas which would help to offset the deadening influence on the average student of over-formal, spoon-fed, authoritarian teaching. But he has yet to see the slightest evidence that the application of these methods would produce any more scientific or artistic geniuses, or contrariwise that current methods of upbringing and education are preventing the emergence of such persons. America and Britain don't seem to be doing too badly at the moment in the production of Nobel science prizewinners, nor in technological advance, and even in creative writing, though, of course, any contemporary judgements in the arts are hopelessly subjective.

It may well be that "gifted" children or adults who score highly on so-called creativity tests, or whose performance is improved by certain methods of education, end up as better adults in some way, but we really have no evidence yet to show in what way. Perhaps they become more tolerant, open-minded,* adaptable, cultured and aesthetically sensitive; perhaps they are even happier, more fully developed personalities, but we just don't know. Whereas we do know that highly creative individuals do not obtain superior scores on these tests.

The correlational evidence suggests that the ability measured by verbal intelligence tests very largely determines the effectiveness of people's thinking, including its originality, up to about the 75th percentile in the population, but increasingly above that level such effectiveness involves not only a richer variety of abilities but also interests, motivational factors and work habits or attitudes. Similarly, it is argued that above the 99th percentile, high creative talent is not so much a matter of acquired skills as of some kind of inner drive which we do not understand, though we are beginning to learn about it through such work as MacKinnon's and through the psychodynamic psychologist's explorations. It is too individual, too unique a combination of a personality inter-acting with a culture, for us to be able to bring it under scientific controls, at least for the time being. And in so far as it seems able to

*Unfortunately, a recent research by Kettman (1967), under the writer's supervision, failed to demonstrate any correlation between Torrance's Minnesota Tests of Creative Thinking and Rokeach's (1960) open-mindedness vs. dogmatism scale in sixth-form grammar school boys, though there were small positive correlations in the case of girls.

make use of environmental stimuli, whether favourable or unfavourable, we cannot expect to manipulate it by the methods which appear promising at lower levels.

SUMMARY

The psychology of creative production and creative individuals has aroused considerable interest in recent years, and has been approached from a number of different viewpoints, which are discussed in this paper. Tests of creative abilities, distinct from intelligence tests, have been developed though it is not yet clear how validly they can discriminate potentially creative people in the arts or sciences from non-creatives. In addition to psychodynamic studies of artists, progress has been made in delineating the personality characteristics of highly creative individuals, e.g. through the studies of MacKinnon. Programmes designed in America to train creative thinking may contain educationally valuable ideas but, in the writer's view, are irrelevant to the development of outstanding creative talent.

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THE SELECTIVE VISUAL ATTENTION OF PSYCHOTIC CHILDREN

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INTRODUCTION

IT HAS been demonstrated by Gillies (1965) and Hermelin and O'Connor (1965) that psychotic children have more difficulty in visual discrimination than severely subnormal children of equivalent performance I.Q. The processing of visual input by psychotic children is not well understood, and a failure to choose one of two alternative display cues to obtain a reward may be a function of perceptual disability, but also possibly of poor association between cue and reward, or possibly of lack of interest and co-operation. In addition, Hermelin and O'Connor (1964), O'Connor and Hermelin (1965) and Schopler (1966) have demonstrated a failure of the development of a sensory hierarchy in psychotic children. If vision has not become a leading sensory channel with these children they may tend not to explore or examine visual displays, and hence may not notice points of similarity or difference between two stimuli.

A technique for determining the ability to discriminate visual displays which is independent of the association between a cue and a reward has been developed for the examination of infants and primates. The procedure usually adopted is to place the subject's head into a viewing box and observe his visual responses to stimuli displayed in it. Generally the measures used are total visual fixation time on any one display, and the amount of change in direction of fixation. Fantz (1958, 1963, 1965) and Fantz, Ordy and Udelf (1962) used this technique to determine maturation of pattern vision in newborn infants, and Berkson (1965) had used a similar technique with primates. Berlyne (1958) refers to eye movement in investigations of curiosity.

This technique seemed especially appropriate in the examination of visual behaviour in speechless children. A quantified determination of eye-movements in the presence of two displays could be held to show that if one were looked at longer than the other, then the two could be said to be distinguishable for the viewer. Furthermore, the amount of time spent examining one or other as compared with random exploration of an undifferentiated background, would measure the interest which they held for the viewer. The results would also provide information on the development of selective attention. Fantz (1963) found that infants more frequently selected patterns for fixation than either colour or brightness alone. He also reported that by the third month the infants' attention to familiar patterns decreased, and consequently attention to novel ones increased.

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It was decided to use this method with psychotic children and to determine first whether they could differentiate a variety of displays and would select one more frequently for visual fixation (first experiment), and secondly, whether they would select relatively familiar rather than novel displays more frequently than normal children (second experiment). This seemed of some interest in view of Kanner's (1951) observation about the "insistence on sameness" which he regarded as characteristic of autistic children. Kanner refers to the child's concern for the preservation of sameness in environmental arrangements and in the succession of events and activities. The present experiment is concerned with briefly presented cue stimuli, which change or remain identical over a limited number of presentations. It seems of interest to determine whether the preference for familiarity observed by clinicians could be extended to include selective attention to relatively familiar, rather than novel, visual stimuli.

METHOD FOR FIRST EXPERIMENT

Apparatus

A box 24 in. (60.8 cm) square by 10 in. (25.3 cm) made of hardboard was placed on a table between the subject and the experimenter (Fig. 1). The interior was painted matt black.

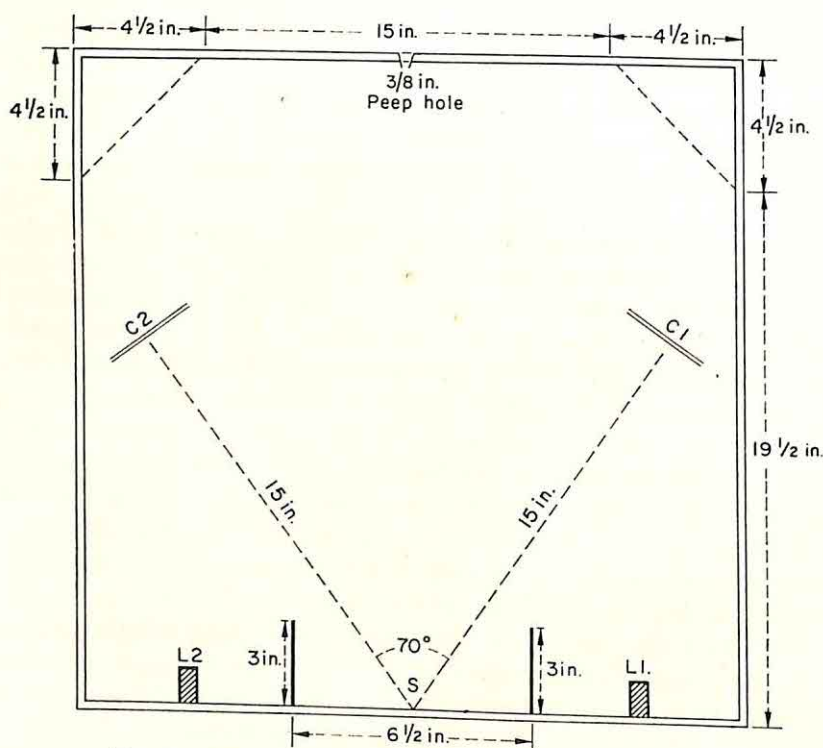


FIG. 1. Plan of apparatus for observing eye movements.

The subject could place his head in the opening marked S and look into the box. A flap hinged to the roof was raised or lowered at the beginning and the end of a viewing session to permit the subject to see the display or to prevent him doing so any longer. Lights which illuminate only their respective displays are mounted at L¹ and L². These illuminated respectively 2½ in. (6.3 cm) square

display cards mounted vertically in slots at C¹ and C². The centres of these cards were 15 in. (43 cm)² from the subject's eyes along the dotted lines. The angle between these lines was 70° (194.4 mils.) so that the subject had to turn his eyes from one in order to fixate the other. The lights were 12-V 6-W bulbs providing an illumination of the displays of 3 ft.-c. Access to the box was obtained through a vertically hinged lid. The main difference between this apparatus and that used with infants was that it was arranged horizontally and not vertically because all our subjects could sit up. Opposite the subject's viewing aperture was a small peep hole to which the experimenter placed his eye. Through this he could see the direction of the subject's gaze. As the direction of visual fixation could be readily determined by the experimenter, this made it unnecessary to examine the subject's pupils for reflections of the displays, as previous investigators had had to do. A three-way switch connected to a pen recorder enabled the experimenter to record the direction in which the subject was looking, i.e. at the left or the right display or elsewhere. Looking elsewhere than at the displays is referred to below as 'non-directed gazing'. The switch operated a pen on a moving paper in an Evershed and Vignoles' event marking apparatus. When the switch was moved to the right, this indicated that S was inspecting one card; when it was moved to the left, it indicated that S was inspecting the other card. When the switch was left in the middle position, this indicated that S was looking at some (any) other part of the inside of the display box.

EXPERIMENT 1

Subjects

Three groups of twenty-eight children saw each display. They were a normal, a severely subnormal, and a psychotic group. The three groups were matched for performance mean speed in seconds on the Seguin Form Board as groups but not by triplets, and the means and ranges of the three groups are 27.64, range 17-45 for normals, 25.42, range 14-68 for severely subnormals and 33.71, range 10-72 for the psychotic children. Analysis of variance showed that the differences between groups were not statistically different, although varying in range. The means correspond to M.A.s of 6-0, 6-0 and 5-3 respectively (Stutsman, 1948). The ages of the three groups in the same order were 5-4, range 4-3 to 6-1; 14-4, range 10-9 to 17-7 and 11-4, range 7-0 to 18-11. The normal children were in a nursery school in London, the severely subnormal in a mental deficiency hospital, and the psychotic children were chosen from two hospitals and a special school. The latter were in each case diagnosed by psychiatrists according to criteria developed by Creak *et al.* (1961). Each psychotic subject had four or more of the nine points regarded as characteristic of childhood psychosis. The psychotic children were behaviourally similar to those described as 'autistic' by Kanner (1957). Half of them had no speech, and all showed severe behaviour disturbance. However, though none of the children had any obvious sensory or motor defects, no detailed records of the presence or absence of physiological and neurological abnormalities were available. Therefore the term 'psychotic' rather than 'autistic' is used to describe this group.

Procedure

The subject was introduced to the apparatus and shown where to look in. He was then told to watch the box in order to see a display and to do so until the screen came down. Each subject in the first experiment was then shown a display consisting of two cards for a period of 30 sec. During this time the experimenter marked the subject's gaze orientation by means of the switch.

The actual instructions were as follows:

"Look in here." S was then shown the viewing hole and urged to insert his head. After he had done this, he was told, "Keep looking in and you will see something, alright, look hard". At this point the screen was raised and the display revealed. If S was not looking in or had closed his eyes, the following sentence was used, "Look in, don't look outside" or "Open your eyes, keep looking".

Seven displays were presented in Experiment 1, each of which consisted of two cards $2\frac{1}{2}$ in square except for the size comparison when one was smaller. The displays consisted of (1) two white cards, (2) two blue cards of different sizes, (3) a red and a black card, (4) two black and white cards (one black card with a white corner and one white card with a black corner), (5) a black and white striped card and a grey card of the same reflectance, (6) a black circle and parts of the circle cut up and re-arranged randomly, and (7) a photograph of a face and the same face cut up and re-arranged at random into sixteen small squares.

The order of presentation of each of the seven displays was randomized over subjects according to a 7×7 Latin Square, and a Gellerman (1933) series was used to determine which card should be on the subject's right or left in any cell of the Latin Square. Sweets were given between presentations, as rewards for the children's continued co-operation. However, little difficulty was experienced in maintaining their involvement with the apparatus if not with the displays.

In order to gain additional information on the clinically reported phenomenon of gaze 'avoidance' in autistic children, a subsequent session was added. In this, the same apparatus (modified) and the same procedure were used, but the display consisted of the face of an adult who looked into the box either with her eyes open, meeting the gaze of the child, or with her eyes closed. The order in which the child would examine the face with eyes closed or open was alternated between subjects, and an alternation of side was also arranged. A 10-sec period for each condition was used, and recorded in terms of the amount of time spent in looking and not looking at the face. The adult's face was shown to the subject in specially made holes $6\frac{1}{2}$ in. wide (16.5 cm) across the corners of the box opposite to the subject. These are indicated by the designations $4\frac{1}{2}$ in. and $4\frac{1}{2}$ in. on Fig. 1. Only two groups were used for this experiment, the normals and the psychotics.

Results

The first analysis compared the amount of non-directed gazing during all 30-sec periods (Table 1). It was found that over all pairs all groups had increasing non-directed gazing scores from the first to the third 10 sec period, and consequently decreasing scores in the inspection time of the displays ($P < 0.001$) (Table 2). Although it can be seen from Table 1 that the increase from Period I to Period III was greater in the normal group than in the other two groups, the interaction term in the analysis of variance is not significant (Table 2). The analysis also showed that the psychotic group had lower fixation scores, and showed more undirected gazing than the normal and subnormal groups ($P < 0.001$). In view of these results, it was decided to use scores of the first 10-sec period only, for subsequent analyses (Table 3). In an analysis of variance comparing the groups for the amount of non-directed gazing during the presentation of the seven pairs of display cards, both the

TABLE 1. MEANS AND STANDARD DEVIATIONS (seconds) OF NON-DIRECTED GAZING IN 1st, 10-sec AND 3rd, 10-sec PERIODS FOR THREE GROUPS OF SUBJECTS

Groups	First period	Third period
Normals ($N = 28$)	20.88 $\pm$ 8.99	40.34 $\pm$ 7.81
Severely subnormal ($N = 28$)	22.95 $\pm$ 8.32	31.68 $\pm$ 17.11
Psychotic ($N = 28$)	35.25 $\pm$ 11.83	46.88 $\pm$ 9.38

TABLE 2. ANALYSIS OF VARIANCE OF 1st, 10-sec vs. 3rd, 10-sec PERIODS FOR THE THREE GROUPS

Source	Degrees of freedom	Sums of squares	Variance estimate	<i>F</i>	<i>P</i>
1. Between groups	2	5772.32	2886.16	29.00	< 0.001
2. Between people within groups	81	8062.06	99.53		
3. Between periods	1	7400.14	7400.14	48.24	< 0.001
4. Interaction	2	863.35	431.67	2.81	N.S.
5. Residual	81	12,424.37	153.39		

TABLE 3. NON-DIRECTED GAZE SCORES

Means and standard deviations (sec) of all seven visual conditions for the three groups

Condition	Normals	Severely subnormals	Psychotics
1. Identical white cards	4.13 $\pm$ 1.73	4.08 $\pm$ 2.29	5.43 $\pm$ 2.31
2. Cards of different size	3.18 $\pm$ 1.74	3.21 $\pm$ 1.98	5.41 $\pm$ 2.99
3. Red versus black card	3.77 $\pm$ 1.97	4.16 $\pm$ 2.06	5.14 $\pm$ 2.84
4. Two black and white patterns	2.90 $\pm$ 1.92	2.68 $\pm$ 1.68	5.20 $\pm$ 2.71
5. Striped card versus grey	2.50 $\pm$ 2.05	3.59 $\pm$ 1.78	5.43 $\pm$ 2.72
6. Circle versus sectioned circle	2.86 $\pm$ 2.17	2.96 $\pm$ 2.05	5.22 $\pm$ 2.73
7. Photograph versus random display	1.25 $\pm$ 1.51	2.27 $\pm$ 1.63	3.43 $\pm$ 2.66

TABLE 4. ANALYSIS OF VARIANCE OF NON-DIRECTED GAZE SCORES FOR THE THREE GROUPS OVER THE SEVEN VISUAL CONDITIONS

Source	Degrees of freedom	Sums of squares	Variance estimate	<i>F</i>	<i>P</i>
1. Between groups	2	483.08	241.54	17.46	< 0.001
2. Between people within groups	81	1120.96	13.83		
3. Between conditions	6	238.93	39.82	11.06	< 0.001
4. Interaction	12	50.81	4.23	1.18	N.S.
5. Residual	486	1749.83	3.60		

group term and the condition term were highly significant (Table 4) ($P < 0.001$). The first of these results confirms that the two control groups looked more at any set of displays than did the psychotics. The significant condition term demonstrates that the seven sets of display cards varied in the amount of interest they aroused in

the children. All three groups examined the pair of photographs of the face and the cut-up face for a longer time than any other pair of cards. In contrast, the control display of two identical white cards was looked at for a shorter period than any of the others. Stimulus cards showing colours, sizes and shapes were looked at for an intermediate amount of time, in this order. The total amount of time in seconds spent *not* looking at either of the two display cards in a 10-sec period are given in Table 3. A high score thus means lack of interest.

In the subsequent analyses selective attention to one of two simultaneously presented display cards was compared for the three groups. A summary of the results of these analyses is given in Table 5.

TABLE 5. ANALYSES OF VARIANCE RESULTS FOR SELECTIVE ATTENTION TO ONE OF TWO CARDS: SIGNIFICANCE OF DIFFERENCES

Stimuli	Normal	Subnormal	Psychotic
1. White/white	N.S.	N.S.	N.S.
2. Large/small	N.S.	N.S.	N.S.
3. Red/black	> 0.01	< 0.01	< 0.01
4. Black-white/white-black	N.S.	N.S.	N.S.
5. Striped/grey	< 0.001	< 0.001	< 0.001
6. Circle/random	N.S.	N.S.	N.S.
7. Head/scramble	< 0.025	< 0.025	< 0.025

Cards which were fixated longer are the first mentioned in any one stimulus pair.

No interactions reached significance in any of the analyses of variance. The results will be discussed together with those of the second experiment reported below.

Two further analyses, on the normals and psychotics only, compared the amount of visual inspection of the photograph of a face compared with a 'real' face, and the times this 'real' face was looked at with its eyes shut, as compared with eyes open. The first of these analyses resulted in significant groups and conditions terms ($P < 0.01$ in each case). Both groups spent more time looking at the real face than at the photo, but normal children inspected both the displays for a longer time than did the psychotics. Comparing the conditions of 'eyes open' and 'eyes shut' resulted in a significant groups term ($P < 0.01$) (Tables 6 and 7), confirming the tendency for more prolonged visual inspection in the normals. Neither group looked more at the face with its eyes open than with its eyes closed.

TABLE 6. MEANS AND STANDARD DEVIATIONS (sec) FOR NORMAL AND PSYCHOTIC CHILDREN LOOKING AT FACE WITH EYES OPEN AND EYES SHUT

	Eyes open	Eyes shut
Normals ($N = 12$)	7.14 $\pm$ 1.38	6.94 $\pm$ 1.20
Psychotics ($N = 12$)	4.44 $\pm$ 2.69	4.61 $\pm$ 2.76

TABLE 7. ANALYSIS OF VARIANCE OF GAZE AVOIDANCE—EYES OPEN VS. EYES SHUT FOR NORMAL AND PSYCHOTIC GROUPS

Source	Degrees of freedom	Sums of squares	Variance estimate	F	P
1. Between groups	1	76.01	76.01	8.63	> 0.01
2. Between people within groups	22	193.90	8.81		
3. Between conditions	1	0.01	0.01	1.0	N.S.
4. Interaction	1	0.43	0.43	1.0	N.S.
5. Residual	22	58.31	2.65		

One more analysis of variance was carried out to see whether the crude total of eye-movements, as distinct from duration of fixation under any one condition, differed either by groups or conditions. The analysis showed that any difference which might exist between conditions was statistically insignificant, but that normals differed from the other two groups in showing more eye-movements from one display card to the other and back again ($P < 0.001$).

The relationship between the total number of changes in the direction of gaze and the total time spent on the visual inspection of displays was also examined. Non-directed gazing (the complement of display inspection), was correlated with the number of eye movements from one display to the other, or to the surrounding background. For the normals, a significant negative correlation was found ($r = -0.49$, $P = 0.01$). Correlations in the other two groups were insignificant (Psychotics $r = -0.19$, $P = NS$, Subnormals $r = -0.11$, $P = NS$).

Although the correlation data are interesting, they are not so important as the effect of two previously mentioned results. In Fig. 2 the means of each group are

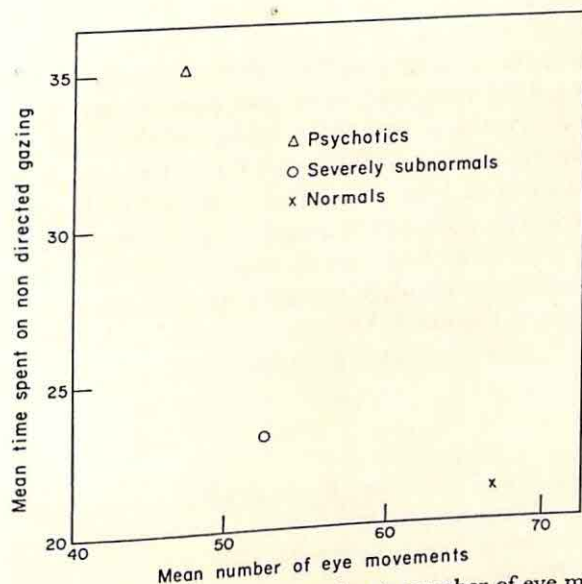


FIG. 2. Relationship of non-directed gazing to number of eye movements.

depicted in relation to two dimensions, the total number of eye-movements and the total amount of time spent examining the black featureless background (the inside of the box) surrounding the two simultaneously presented displays.

As previously stated, a comparison between groups in terms of non-directed gazing separates the psychotic children from the other two groups ($P = < 0.001$). A comparison in terms of the total number of eye movements distinguished the normals from the other two groups ($P = < 0.001$). Seen together as in Fig. 2, these results permit us to make the two following inferences. Normal subjects look at the two displays for about the same length of time as the severely subnormal group, but switch their eyes from one to the other more often. Secondly, psychotic and severely subnormal subjects switch their gaze from one point to another about equally often, but psychotics switch from one display (or the other) to the background, far more than do the severely subnormal. The inferences seem justified by the results, despite considerable group overlap.

EXPERIMENT 2

Apparatus

The same apparatus was used as in the first experiment but the pairs of cards used for the displays were different. The $2\frac{1}{2}$ in. square cards were black and white photographs. The first was of a group of penguins, the second of a bottle, the third of a horse, the fourth of trees, the fifth of people sitting down, the sixth of people marching, and the seventh of a cup and saucer.

Subjects

The subjects were the same as in the first experiment and the order in which each subject did the first and second experiment was alternated.

Procedure

The aim of this experiment was to see whether psychotic children would look at a familiar display rather than an unfamiliar one, longer than would a severely subnormal or a normal group. Cards were again presented in pairs and each card was presented with every other as well as once on its own, with no card in the other holder. One subject saw card 1 on its own, and paired with each of the others, for another subject card 2 was the constant, and so on to card 7. This procedure was repeated four times, thus involving twenty-eight subjects. A Gellerman series was used to determine the side on which any card appeared for each display. Thus while one display card remained the same throughout a session, the other was changed from trial to trial. Order of presentation of cards was randomized and balanced between subjects.

Results

Each picture from 1 to 7 was seen by four subjects on each of seven occasions, once alone and once with each of the other six pictures. If, therefore individual 'A' saw picture number 1 seven times he saw it with no other card and with pictures 2, 3, 4, 5, 6 and 7. Picture number 1 therefore became familiar to him while the

Other pictures were novel. The fixation time for the constant (familiar) picture was subtracted from that of the novel one with which it was paired. The score, if positive, showed that on that occasion the subject looked longer at the novel than at the familiar card. A negative score meant the reverse. These difference scores were summed over all comparisons and analysed (Tables 8 and 9). Groups and successive comparisons were the terms in the analysis. The groups term was not significant but

TABLE 9. ANALYSIS OF VARIANCE OF "FAMILIARITY V. NOVELTY" DIFFERENCE SCORES

Source	Degrees of freedom	Sums of squares	Variance estimate	F	P
1. Between groups	2	94.12	47.06	2.47	N.S.
2. Between people, within groups	81	1539.36	19.00		
3. Between comparisons	6	310.04	51.67	3.24	< 0.01
4. Interaction	12	268.04	22.34	1.40	N.S.
5. Residual	486	7740.90	15.93		

the comparisons term was significant at the 0.01 level. Thus for each group successive presentations of the same card with other cards resulted in the familiar card being looked at less and less often. As there was no significant interaction it can be assumed that the groups were similar in this respect. A comparison of the first occasion with others would not be appropriate as on the first occasion both cards were novel and neither familiar, but *t* tests comparing the second and subsequent occasions showed that the familiar card was looked at significantly less by the sixth and seventh repetition. This was irrespective of the particular cards used, of course, and illustrates the trend of the data, which, despite fluctuations, showed an increasing tendency for all subjects to look at novel rather than familiar pictures, as occasion succeeded occasion. This was just as true of the psychotics as of the other two groups.

DISCUSSION

The two experiments justify several conclusions concerning the visual orientation or the exploratory eye movements of psychotic children. They spend less time looking at any pair of display cards than do normal or subnormal children, and more time in non-directed gazing. Such children do, in fact, treat two white squares as identical as judged by the criterion of amount of viewing time given to each and their visual behaviour does not show any special position effect. Psychotic children do not only seem to perceive identical stimuli as such and to respond accordingly, but they also perceive differences. This, for instance, is shown by the fact that all groups, including the psychotics, looked more at the picture of a face than the same face scrambled, and more at a striped than a plain surface of equal luminance. In these respects the responses were similar to those of young normal infants (Fantz, *et al.* 1965). All subjects also looked longer at a red than at a black card, though a black one with a white corner was not fixated significantly less than a white one with a black corner. All subjects showed an equal distribution of fixation between a small and a large square and between a circle and the scrambled parts of the circle. Comparing the

fixation time between pairs of cards, all subjects spend more time looking at the face and its scrambled parts, than at any other pair of stimulus cards. This may have been because of the greater interest in the subject matter, or because of greater perceptual complexity of the photographs as compared with other cards.

If psychotic children had shown a tendency for 'gaze avoidance', one would have expected them to look for a shorter period at a face whose eyes met their gaze, than at the face with its eyes closed. No such difference was found, and in addition, both psychotic and normal children still spend more time looking at a 'real' than at a photographed face.

In general, therefore, in so far as these displays are concerned, psychotic children show responses comparable with the two other groups, and differ from them only in looking for less time at any one display. The same observation applies to the results of the second experiment where the psychotic children, subnormals and controls were equivalent in their visual preference for novel, as compared with relatively familiar, displays. Thus Kanner's observation about "insistence on sameness" (1951) cannot be extended to include the brief and repeated presentations of visual stimuli. The technique applied here can be used to explore aspects of the perceptual capacity of non-communicating children independently of any association of cue and reward.

Two facts of some importance for learning theory and educational practice emerge from the results of the first experiment. Firstly, psychotic children do not spend as much time looking at displays (as compared with ground), as do normals and the severely subnormal. Secondly, psychotics and subnormals do not switch their gaze as often as normals. The first fact could lead to the conclusion that psychotics learn less because they do not examine displays for a long enough time. The second fact could justify the inference that subnormals have problems of discrimination and identification, partly because they do not switch from one display of a pair to the other either fast enough or often enough. One could speculate that they see one display, then another display, but do not 'compare' their features. Furthermore, psychotic subjects not only do not 'compare' as much as normals, but in addition do not look for so long at displays. This would make their visual learning, visual identification, and visual discrimination problems even more acute than those of the subnormal.

This finding of briefer inspection of stimuli by psychotic children and fewer eye movements may indicate that visual exploration is less rewarding for them. If it could be made more rewarding, it is possible that their visual inspections of the environment might increase. It is possible that techniques of external rewards and punishments, such as those used by Lovaas (1964) might be useful. On the other hand, it is possible that central fixation on a visual stimulus yields less information to psychotic children than to others. Some clinical observations (L. Wing, personal communication) seem to indicate that such children rely more on peripheral than on foveal vision. The large amount of time spent by the psychotic children in apparently non-directed gazing may be due to this.

Thus the method used in this study leads to two conclusions. The first is that selective attention, and therefore by inference, the perception of differences is similar in the groups investigated. Secondly, the briefer inspection time found in the

psychotic children, and the longer time spent in undirected gazing, may indicate that difficulties in discrimination learning are associated with lack of adequate inspection of the stimuli.

Additionally, the lack of 'comparative' eye movements in the severely subnormal may be relevant to their slowness in visual discrimination learning.

SUMMARY

A method for quantifying the visual inspection time of two simultaneous displays developed for infants was adapted to the study of psychotic children. Their inspection of two cards in a series of display pairs was compared in a first experiment. They looked for a lesser time at each pair of cards (display) than the normal and severely subnormal controls, but resembled them in the relative distribution of fixation time between different displays. Selective attention to cards within each display also resembled that of the control groups. Psychotic children, and the normals and subnormals, spent more time looking at a photograph of a face than at any other display. In another presentation they (and normal controls) spent equal amounts of time looking at a face with eyes open and the same face with eyes shut.

The severely subnormals make fewer eye movements from one display to the other than do normals, although spending the same time on displays. These movements may be important for discrimination learning.

In a second experiment the supposed indifferences of psychotic children to novel displays was examined using the same techniques. They were shown to be statistically similar to the two control groups in their interest in novel stimuli.

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Note added in proof. A point of logical and psychological importance deserves a brief note. The task to see that two white squares in different positions were looked at for equal periods of time was imposed to check position preference in orientation and not to check equality of display. The underlying assumption of the technique used in this experiment is that different responses indicate the awareness of different displays. The correct logical converse of this proposition (partitive conversion) is that some different displays will evoke different responses (but not all).

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REPROGRAMMING THE SOCIAL ENVIRONMENT*

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TRADITIONALLY, clinical psychologists have shown a curious aversion to investigating a set of variables which would seem to be crucial to the development of adequate treatment programmes. This perceptual selectivity in examining causal variables characterizes the thinking of both the traditional psychotherapists and the current behaviour modifiers. Apparently it is the conviction of both groups of investigators that the effects of treatment will generalize and persist as a function of some intra-organismic variables. Concepts such as 'insight' or 'stimulus generalization' are regularly invoked as automatically providing for the generalization and persistence of treatment effects.

It is assumed by the writers that for treatment procedures to have utility some process analogous to stimulus generalization must exist as a *necessary* condition. However, this process does not provide a *sufficient* condition for either the generalization or the persistence of treatment effects. If the modification programme is applied in the institutional setting or in the outpatient clinic, then it is necessary to introduce some variant of the stimulus generalization process to account for the increase in occurrence of the socially adaptive behaviours in the social milieu. However, when these occur at or on the playground, their eventual position in the child's repertoire of social behaviour is a function of what consequences are provided by the parents, or the members of the peer group, for them. If they are not positively reinforced, then although technically generalization did obtain, in terms of practical social engineering, such short-term generalization is of little consequence. Effective social engineering would require not only that the effects generalize but that they persist. In this context, then, the members of the child's social environment are the final arbiters in determining the practical outcomes of intervention programmes. This being the case, it seems reasonable to consider the reinforcement schedules of the parents or the members of the peer group as representing the primary focus of an intervention programme.

There is, as yet, no ready-made technology available which produces consistent changes in the schedules of reinforcement used by parents or by members of the peer group. The observation data provided in the report by Ebner (1967) showed that when a child's output of deviant behaviour was changed, in some classrooms the teachers and peer group altered their schedules of reinforcement. However, whether

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these changes in reinforcement schedules facilitated or impaired the effects of a behaviour modification programme varied with the social setting (recess yard or classroom), and also as a function of whether the person interacting with the child was a teacher or a member of the peer group. For the present, it is clear that there is no way of predicting in advance whether the social agents to be found in a classroom setting will support or impede the effects of an intervention programme.

Rather than alter the deviant behaviour and then determine the effect of this change upon the reinforcement schedules of relevant social agents, it seems more reasonable to design intervention procedures which operate directly upon the social agents. The present study would be classed by Kanfer and Phillips (1966) as an example of an intervention approach in which the experimenters altered the reinforcing contingencies being provided by the parent. The parents then changed the behaviour of their own child. In the past year there have been several reports of similar programmes which have successfully shaped parents to function as behaviour modifiers in applying the operant principles outlined by Skinner (1958) to the behaviour of their own children, e.g. Hawkins *et al.* (1966), Wahler *et al.* (1965).

The subject of this study was a 5-year-old boy who was withdrawn, isolated, and sporadically engaged in bizarre emotional outbursts and in such atavistic behaviour as eating faeces. Observations made in the home showed that he was relatively non-responsive to contacts initiated by the parents. Over a 4-week period, conditioning procedures were introduced to re-programme the parents and the child so that they would become mutually reinforcing. Programmes were also designed for use by the parents in changing the frequency of his isolated and negativistic behaviour. Observations collected in the home provide the criterion data for evaluating the outcome of the programmes.

METHODS

The subject

Earl was a 5-year-old boy brought to the clinic by his parents. They were concerned about his extreme isolation, his unresponsiveness and his sporadic outbursts of bizarre behaviour. Typically, Earl spent most of his day in his bedroom upstairs, or sitting on the stairs. Most of the time he played by himself. By and large, he was not responsive to efforts by his parents to interact with him through commands or requests. He was generally negativistic and unco-operative. Periodically, he would have violent emotional outbursts in which he would bang his head against the wall until blood flowed. On other occasions he would explode violently, and destroy toys, smear paint, or knock plaster off the walls. Sometimes he would crawl under the bed during one of these episodes and "sound like an animal". Occasionally he would eat faeces. A year previously, he had been severely over-weight, and since that time, it had been necessary to restrict his diet and guard the food supplies in the house.

The mother reported that she felt Earl to be a repulsive child, albeit that she felt sorry for him because he seemed to be unhappy and wandering around in a daze much of the time. Both parents were also particularly concerned about his not responding to affection when it was offered to him.

According to the father, Earl's behaviour and development had been normal until the age of about 18 months. At that time, the father and his first wife separated.

Months of litigation were required before it was possible to bring Earl into the father's present home. When Earl did appear, he was obese, only partly socialized, severely withdrawn, and given to displays of extremely primitive behaviour. His stepmother had many problems with him, and as a result began to find it increasingly difficult to show him warmth or affection. She had hoped that he would outgrow the disturbing behaviour as he adjusted to his new home. She had been partially successful in her attempts to train him to eat properly and in personal hygiene, but Earl continued to withdraw, and to exhibit unusual behaviour.

Assessment of the child

The assessment procedures followed three general approaches. The first provided a technique which summarized a set of descriptive statements about Earl's behaviour. On the basis of the summary, he was then compared with other children displaying deviant behaviour. Secondly, he participated in a series of laboratory studies to determine his responsiveness to social reinforcers dispensed by the mother, and his tendency to be 'negativistic' when placed in a situation where he could imitate some of his mother's behaviour. Finally, his social interaction with a neutral adult was contrasted with that towards his mother in the same setting. The baseline observations made in the home of the behaviour of child and his parents were also a part of the assessment process, but these will be described in a separate section.

Descriptive classification. When presenting a report of a single case in which multiple problems are evident, it is very difficult to provide for the possibility of replication. By keeping the description of the child somewhat vague, it could always be claimed that the subjects of replication attempts by other investigators were 'really' dissimilar to the one described by the writer. To forestall such a situation, an effort was made to provide a careful description of the child and a summary statement which could serve as a basis for replication. A procedure for doing this had been outlined by Patterson (1964).

Earl was observed during the occasion of his first visit to the clinic, for the presence or absence of 149 behavioural items. These items, plus the report of the parent and teacher as to 'symptoms', constituted the description of Earl. The behavioural items and symptom list had been previously analysed for a sample of 100 deviant boys to determine the factor structure which characterized this matrix. The Wherry-Gaylord iterative factor analysis was used to produce five oblique factors (Wherry and Gaylord, 1943; Wherry *et al.*, 1951). The distribution of scores for each of the five factors had been transformed into deviation scores and normalized by the use of McCall's *T* score (McCall, 1922). The descriptive profile for Earl's behaviour is shown in Fig. 1.

In the report by Patterson (1964), there were no classes of children whose mean profiles were exactly similar to that which characterized Earl: Hyperactive, anxious, and aggressive to peers. In comparing his profile to those obtained from the earlier study, it was obvious that his was a rather unique combination of behaviour. Out of a sample of 100 boys aged 7-12 (I.Q.'s 80 and above), only one child had a profile that even vaguely resembled Earl's. The intra-class correlation coefficient comparing his profile with that of Earl was only 0.47. This coefficient was based upon all the

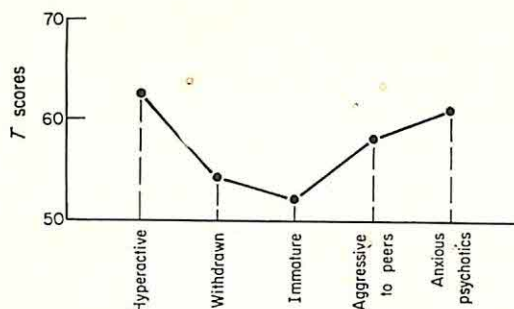


FIG. 1. Earl's profile of descriptive factor scores.

components of profile information: level, rank and scatter. Earl, then, was a low base rate case, by implication a rather difficult problem for replication.

Responsiveness to social stimuli. According to a hypothesis offered by Patterson (1965a) and supported by data in Patterson and Fagot (1967) the child who displayed deviant behaviour tended to be selectively responsive to social agents. Laboratory procedures were designed to measure the effectiveness of the parent and peers in dispensing social reinforcers. The procedure was described in Patterson, Littman, and Hinsey (1965), the reliability data were provided in Patterson and Hinsey (1965), and some validation data were summarized in Patterson (1965a). For purposes of comparison, the obscure scores resulting from these studies were converted to deviation scores and expressed as *T* score values (Mean 50 and S.D. of 10).

The pre-treatment measure of the mother's effectiveness in using positive social reinforcers to shape Earl's behaviour was a *T* score of only 33.0, which is nearly two standard deviations below the mean.

The second laboratory task measured the effect of the parent as a model in eliciting 'negative set' behaviours from the child. The procedure was described in Patterson *et al.* (1967). The measure indicated that the child consistently displayed picture preferences which were the opposite of those expressed by the model. Data were available from a previous trial which indicate the preference of the child. In the laboratory, those occasions when he disagreed both with the model and with his own previously expressed preferences, were tabulated as contributing to a 'negativism' score. In Earl's case, with his mother as the model, his negativism score was 100 per cent.

In summary Earl's behaviour was not under the control of positive social reinforcers dispensed by the mother. In addition, he evidenced a general negative set with regard to modelling his behaviour on hers. Successful intervention with behaviour modification techniques should produce changes in Earl's general responsiveness, both to social reinforcers and to modelling his behaviour on that of the parents. Data had been previously provided for one case by Patterson (1965c) which showed that one of the outcomes of a successful behaviour modification programme had been an increase in the child's measured responsiveness to social reinforcers. To further test this assumption, Earl will be re-evaluated at the close of treatment on both of the laboratory measures of responsiveness to social stimuli.

In the clinic playroom, Earl seemed responsive to the unfamiliar adult. For example, with some effort it was possible to elicit a smile from him, and he played and talked appropriately. He displayed no asocial or maladaptive behaviour when alone with the adult. However, when his mother joined him in the playroom, Earl was noticeably non-responsive. He interacted with her in a limited manner both in number and duration of contacts.

Observation procedures

The first 20 or 30 min of each session in the home were used to collect observational data. To facilitate this, it was necessary to introduce some structure in the natural setting. For Earl, the setting was restructured so that he spent the 30 min in the kitchen rather than in his bedroom. His mother also scheduled her work activities so that she could spend most of this time in this area. It was also necessary to request that the father spend at least one or two noon hours at home per week, which he did not normally do because he did not eat lunch.

During the observation period, the observer did not interact with the members of the family. The data were transcribed in a narrative fashion using the portable tape-recording equipment described by Schoggin (1964). If someone talked to an observer during this time, he simply shook his head and continued talking into the face mask. The narrative provided a detailed account of the interaction between the parents and the child.

Following an observation, the tapes were transcribed and coded. One qualitative aspect of the parent-child interaction which was particularly emphasized in the descriptions, was the 'warmth' of the responses provided as a consequence of a social behaviour. This was based upon cues from the content of the verbal response ("You are doing very well today, Earl"; "Mother, you look pretty"), non-verbal cues such as a smile, a frown, changes in voice inflection, or whether or not the speaker looked at the other party. To determine the reliability of the coding the percentages of agreement were calculated for several transcripts and several different pairings of judges. The median percentage agreement across judges and transcripts was 71 per cent.*

The parents

Earl's mother was an attractive woman aged 26 years. She dressed appropriately, and showed herself to be a well-organized housekeeper. A cursory investigation of her background and behaviour did not reveal any marked psychopathology; this

*In discussing with J. Reid the problem of calculating the percent agreement between observers, it became apparent that under certain circumstances the percentages obtained would be almost completely determined by the base rate frequencies of the event being observed. If the event X is a low base rate event and the denominator used to calculate the percentage consists of all X's and all non-X's then it is possible to obtain very high figures estimating the agreement between two observers even though they were only in modest agreement on the actual occurrence of X's. For this reason, the denominator used in estimating the agreement between coders consisted of the sum of those occasions on which either of the coders noted the occurrence of a 'warm response'. The numerator consisted of the agreement between the coders.

To determine the reliability of inputs provided by observers, two observers dictated their material from the same session in the home. The agreement between coders in categorizing 'warm' responses was 62 per cent. The same method of calculating percentage agreement was used as described in the paragraph above.

was in keeping with her MMPI-reference profile of '903604 (F and K within normal limits). The mother had 10 years of education, and prior to her marriage had worked for several years as a waitress. In her interaction with her 6-months-old baby, she was observed to be warm and affectionate. This was in marked contrast to her interaction with Earl. With the latter, she was observed to be a rather cold, stern disciplinarian.

Earl's father was aged 29 years and had received approximately 1 year of training in college. He was a professional entertainer and possessed obvious social skills. It was necessary for him to spend several evenings a week working, as well as working during the day. He had left the responsibility for care of the children almost completely to his wife. His earlier history had been rather stormy, and characterized by a good deal of defiant and acting-out behaviour. However, for the past few years he had assumed a responsible position, and, if anything, would be characterized now as being somewhat tense and driven. His general descriptions of himself in the intake interviews were commensurate with his self description on the MMPI: 95'' 2' 4368701—.

Treatment procedures

A series of conditioning programmes were designed; each was directed toward a different class of deviant behaviour. During the conditioning period (February 1—March 1), the observation data were collected during the first $\frac{1}{2}$ hr of each session, after which the conditioning procedure(s) were employed. Generally the participants were Earl and his mother; on some occasions the father was a member. During the 4-week period, there were a total of twelve conditioning sessions, which lasted from 10 to 20 min.

Formulation. During the collection of the baseline data, a general formulation was constructed which was of heuristic value not only in planning the conditioning programmes, but may also be of use in conceptualizing the schedules which provide for the acquisition and maintenance of a more general class of deviant behaviour than just the specific case being considered. Needless to say, the fact that the conditioning procedures changed the deviant behaviour would in no case verify the formulation.

At 2½, when presented to his stepmother, Earl was not only a thoroughly repulsive child, but a frightening one as well. He was grossly overweight. He had not even developed rudimentary social behaviour, and it was necessary for the stepmother to begin an emergency socialization training programme. Gradually she began to use primarily negative reinforcers because they seemed to have an immediate effect in controlling his behaviour. During the baseline period, she was observed to use aversive stimuli to the complete exclusion of positive reinforcers. For Earl, isolating and withdrawing behaviour would be reinforced by the removal of the aversive stimuli provided by the mother. Severe punishment or threats of punishment would occasionally produce violent and bizarre outbursts. However, generally the mother and Earl avoided each other as much as possible. Neither functioned as a positive reinforcer for the behaviour of the other.

One of the first goals for the conditioning programmes was to train the mother and father to increase their use of positive reinforcers, which might reduce the

frequency of his escape and avoidance behaviour. This, in turn, would provide an opportunity for socialization to occur. However, such a parent training programme seemed difficult to implement because Earl's behaviour did not function as a reinforcer for the social behaviour of either of the parents. His non-responsiveness invariably extinguished any sustained attempt on their part to maintain social interactions. To produce a change it seemed necessary to change several aspects of this social system, simultaneously. Therefore, the initial programmes were designed to fulfil four functions: (1) train the mother to use positive reinforcers, (2) train her to initiate more social contacts, and (3) *at the same time* train Earl to function as a more effective social reinforcer for the behaviour of the parent, and (4) to initiate more social contacts to his parents. Later in the series, programmes were also introduced for shaping Earl to more co-operative behaviour, and increasing the amount of time spent in social settings. These will be described later.

A programmed textbook for parents. In previous investigations of this kind the experimenters had found themselves repeatedly instructing the parents in the basic principles involved in social learning theory. To facilitate this instruction a 120-frame programmed textbook on social learning theory was constructed for parents. Each item provides a question and a space for the parents' written response. In the text, examples of parent-child-behaviour were used to illustrate the principles of reinforcement, extinction, deprivation, and aversive conditioning. The hypothesis was also presented that parents and peers often reinforce deviant child behaviours. Both parents responded to the programme (January 30–February 1).

During the baseline period, an additional sixty-three frames were written describing the specific parent-child interactions which provided the contingencies that maintained Earl's deviant behaviour. This chapter also outlined the steps to be taken in the treatment programme; both parents responded to the programme (February 8 and 9).

Conditioning programme. The first programme was designed to condition Earl and his parents to provide reinforcing consequences for each others' social interactions. It was carried out in the home.

(Feb. 2.) The first set of contingencies involved training Earl to attend to the experimenter rather than gazing about the room. On each occasion that he looked at E, the buzzer sounded and an M & M candy was placed in a paper cup in front of him. He was also praised by E and by his mother. During later trials, the candy was given to him at the end of the training session. On some of those occasions it was also possible to trade in the M & M candies for plastic toys or trinkets.

After a few reinforcements, Earl attended to E with some regularity. Then E asked Earl to make a few marks on a piece of paper; when he complied E used the marks as a basis for drawing a cartoon. While drawing the cartoon, E made 'humorous' comments to Earl. Earl, however, gave no indication that he perceived the humour. E began reinforcing Earl for small muscle movements around his mouth. On each occasion E praised him for smiling. Eventually a 'real' smile did, in fact, occur and both E and the mother praised him. When E and the other members of the team could elicit smiles with some regularity, the procedure was turned over to the mother. At first Earl did not respond to the eliciting cues provided by the mother. However, by alternating a brief series of trials in which an experimenter elicited and reinforced

smiles with the mother serving as social agent, the mother eventually brought 'smiles' under her control. This training occurred over a series of six trials.

The next procedure initiated on February 9th was designed to facilitate the generalization of change in the patient's behaviour from the training sessions to occasions in which the experimenters were not present. The parents were told that it was necessary for them to 'practise' attending to adaptive social behaviours emitted by Earl. They were also to practice dispensing social reinforcers contingent upon these behaviours. To facilitate this they were to write a note describing the adaptive behaviour and the social reinforcers used to strengthen it. For each note received, the experimenters subtracted \$1 from their clinic fee. Over a period of a few days the parents 'earned' \$36 dollars in this fashion. The following is an example of such a note. "Earl came to the bathroom to tell me that the coffee was boiling over on the stove. This was unusual for him to do and he was reinforced by strong praise."

Earl was beginning to spend proportionately less of his time in isolation. However, a programme was introduced to accelerate the change. This was designed to teach the mother to attend to his presence, and to reinforce him for being in her general area. (Feb. 15.) The mother was instructed in the use of the signalling device.

Earl was told that he could earn M & M candies by staying downstairs with his mother during the day. He was also told that his mother would use the buzzerbox to indicate when he had earned an M & M and that the counter in the box would keep score for him. When one of the experimenters arrived on the following day, he would provide Earl with the appropriate number of candies or trinkets. During the first few trials, Earl was reinforced by his mother for simply sitting on the stairs next to the kitchen; he would also receive a reinforcer for coming into the kitchen. If he remained a few minutes she would reinforce him again. After a few days it was possible to place him on a FI₁₀ schedule (fixed interval).

(Feb. 22.) It was noted that Earl was frequently very negativistic. Often he would 'pretend not to hear' or he would delay responding for a long period of time and thus force the parent to make repeated requests. A conditioning programme was designed to condition cooperative behaviour. Earl was asked by E and by the mother to perform various tasks. While carrying out the requests he was repeatedly reinforced with praise and the buzzer. For example, the mother might request repeatedly "Please close the door". She reinforced him repeatedly as he went about this task. The importance of rewarding good behaviour and not emphasizing misbehaviour was again stressed to the parents.*

*Earl was also over-eating and stole food at night. Observations made during a luncheon indicated that the mother paid little attention to Earl except to point out *enthusiastically* that he was eating heartily. During the meal Earl commented several times that he was full. The mother ignored the comment and made no effort to remove the plate, but instead continued to point out how much he was eating. Earl continued to eat.

It was suggested to the parents February 23, that smaller portions be placed on his plate; but that more food be provided if he requested it. He was to be strongly reinforced by both parents for eating a normal amount of food and *never* reinforced by attention or excited comments about his over-eating. Since that time there have been no further complaints about over-eating or stealing food.

RESULTS

One of the pivotal hypotheses in planning the treatment programme was that neither parents nor child provided adequate reinforcers for the maintenance of social interaction. If the child and one of the parents were placed in a situation and instructed to interact with each other, a frequency count of the rate of their verbal behaviour would show an 'extinction effect'. Figure 2 provides cumulative curves for

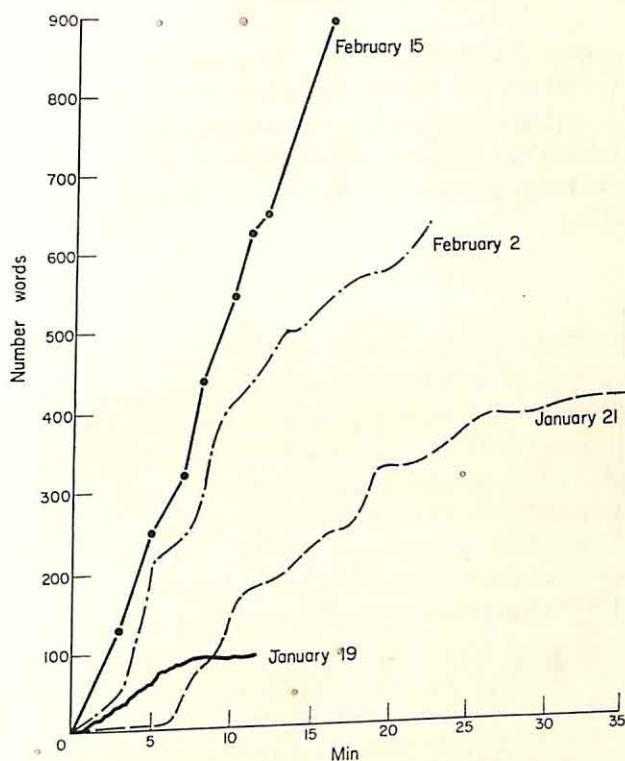


FIG. 2. Cumulative curve: rate of words per minute Earl $\times$ Mother interaction.

the rate of verbal interaction between Earl and his mother on four different days. The data were the number of words per minute.

The cumulative curve for January 19 showed a clear extinction effect. Both the mother and child talked to each other in a desultory manner (81 words) for about 5 min. Neither individual used sentences longer than five or six words, and almost invariably the queries and replies were delivered in a 'uninterested' monotone.

The data for January 21 reflect a substantial increase in the duration of interaction in that the mother and child responded for a 20 min period before the action in that the mother and child responded for a 20 min period before the interaction extinguished. There was also a light increase in rate of responding on that day. Interestingly enough, the mother commented that she and Earl had interacted more in these two sessions than they had for a long time.

On the weekend prior to February 2, both parents had responded to the programmed textbook. The experimenters were surprised to note that on the next

observation session the rate of verbal interaction had almost doubled. This effect was obtained prior to intervention with the conditioning programmes. The cumulative curve for the rate of verbal interaction on February 15 showed the effects of several weeks of conditioning. At this point, there has been a marked increase in the rate of interaction, indeed the rate of verbal behaviour was so high that it was difficult to dictate a complete account of it into the tape recorder. Both mother and child used longer sentences, showed changes in inflexion, and looked at each other as they talked.

Data were also collected which reflected changes in the qualitative aspects of the interaction. It was predicted that there would be more frequent occasions on which the consequence of a verbal initiation by one member would be a smile, a look, or a verbal response in which the inflexion clearly varied on the part of the other. Presumably these 'warm' consequences would function as more effective reinforcers for maintaining interaction.

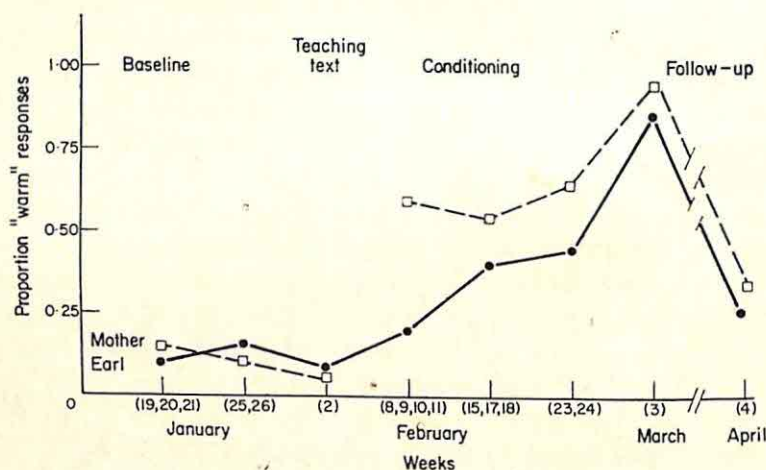


FIG. 3. Change in proportion of 'warm' responses.

The data in Fig. 3 showed that these kinds of consequences were provided at very low rates by both the mother and Earl during the baseline period. The introduction of the teaching textbook produced no change in their occurrence for either parent or child. However, shortly following the introduction of the conditioning procedures, there were marked increases in the occurrence of 'warm' consequences by both parent and child. The data from the follow-up observation showed that the proportion of warm responses was several times higher than the baseline figures. One reason for the apparent drop from the conditioning period was the fact that the rate of interaction was now an extremely high 252 words in 27 min. Even though the mother and Earl were providing the same absolute number of warm consequences as they had during conditioning, the proportion would be lower.

It had been expected that as the parents began to use positive reinforcers more frequently, Earl would spend less time isolated in his room. The data in Fig. 4 showed the proportion of time each morning that Earl actually spent isolated in his

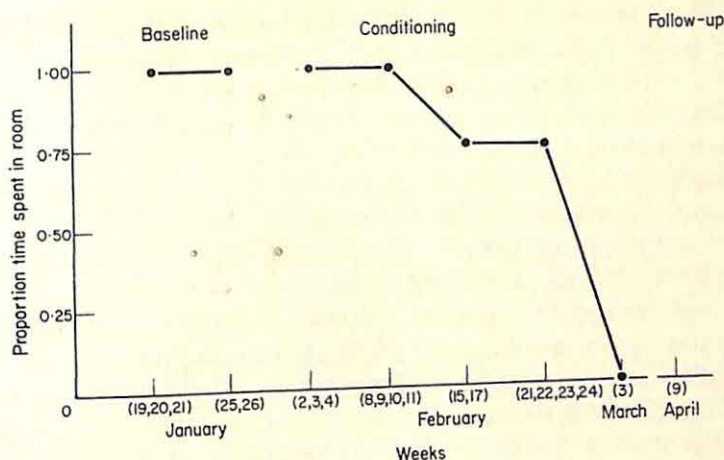


FIG. 4. Proportion of time spent isolated.

bedroom. By February 15 there had been only a slight decrease. This indicated that a more specific conditioning programme designed just for the 'isolation' behaviours might be a more effective technique for dealing with this problem. The conditioning programme described earlier was introduced. In that programme, the mother provided M & M candies as a reinforcer for remaining in the same room with her. The data showed marked changes reflecting the effect of the programme.

Approximately 6 weeks following the termination of the programme, Earl and his mother returned to participate in the laboratory assessment procedures. On this trial, his 'negativism' score was 64 per cent which was considerably lower than the comparable figure obtained during his pre-treatment assessment. This indicated that he had considerably less negative set in interacting with his mother, and presumably would be more likely to model some of his behaviour on hers. For the procedure which measured responsiveness to social reinforcers, the Post-test *T* score was 47.2. Although this is a considerable increase over the measure of responsiveness obtained during the pre-treatment assessment, it should be discounted, as there were some errors in procedures for the second trial. The mother inadvertently used half a dozen social reinforcers during the baseline period of the conditioning trial. Taken together, the laboratory data showed an increased responsiveness to the modelling and the social reinforcing behaviours of the mother. This should mean that the mother, and probably the father as well, would be in a better position to use these techniques of behaviour control in continuing the process of socializing Earl. These meagre findings also serve to replicate the study by Patterson (1965c) which also showed an increase in the laboratory measure of responsiveness to social reinforcers. A sample of public school children did not show increases of this kind when reconditioned by the same experimenter after an interval of 1 week (Patterson and Hinsey, 1964). In some sense, an increase in responsiveness to social stimuli may be an unexpected by-product of successful intervention.

Five weeks following termination of the programme data were collected relevant to Earl's social behaviour in the nursery school. An observer was instructed to attend

to the behaviour of two boys in the classroom. He was not told that either of them had been the subject of a behaviour modification programme. He recorded the occurrence of appropriate social interactions for each of these children. The data showed that Earl was interacting appropriately with a peer during 37 per cent of the time intervals, while the other boy was interacting appropriately during 40 per cent of the time intervals. A week later the same observer collected comparable data for the two boys on the playground. On that occasion, the data showed that each of the boys were interacting appropriately with a member of the peer group during 87 per cent of the time intervals. The observer was also instructed to record the frequency of occurrence of such behaviour as 'isolated', 'temper tantrums', 'aggressive', 'negativistic', and 'self-abusive'. None of these were tabulated from Earl on either day. For the other boy, three such events were recorded for the first day and seven on the second day. By this, or any other criterion, we could conceive of Earl's social interactions with peers as falling well within the range of 'acceptable' behaviour. A year later, the senior author was collecting data in a first-grade class and was pleased to find Earl a member of that group. Observation showed him to be well accepted by the other children. It was also obvious that he had acquired the necessary repertoire of academic-classroom behaviour. The teacher indicated that he had been somewhat withdrawn in the first few weeks of school in the autumn but, that such behaviour had been quickly replaced by more adaptive skills. She also reported that he had tested in the above-average range on one of the school's intelligence tests. When asked, she indicated that she did not think that there was anything about his behaviour which should be of concern and that there were several other children in the classroom who were more clearly in need of 'help'.

DISCUSSION

It seems reasonably certain that in this, and in the other cases treated, the 'conditioning' procedures had some impact upon the behaviour of various members of the family. However, it is equally clear that in no sense was socially adaptive behaviour being conditioned 'de nouveau'. The speed with which the programmes produced an effect (about 6 hr of clinical time) would suggest that 'new' behaviours were not being 'shaped', but rather that the effect of the programme was to produce a small increment of change in the kinds of social behaviour which *already existed* in the repertoire of the child, or the parent. In effect, the previous history of socialization is a necessary antecedent for the short term intervention programme. The extreme difficulty in constructing intervention programmes for children who have massive behaviour deficits are evidenced in the reports by Ferster (1961), Lovaas *et al.* (1964), and Bricker (1965). This means that the typical out-patient treatment programme presupposes that the individual has already been almost completely socialized. For example, Earl occasionally displayed a 'warm' reaction to the initiations of neutral adults. Similarly, his stepmother was observed to be very responsive when interacting with her 6-months-old infant. This reminder that society has already 'shaped' the adaptive behaviours is intended to elicit a more humble response on the part of the reader than the 'Svengali effect' frequently claimed by the traditional therapist and the behaviour modifier. Such individuals frequently give the impression that they are lifting their patients, new-born, from the waves.

A second aspect of this process which merits further consideration and investigation involves a phenomenon that has occurred in *all* of the cases which would be labelled as clinical successes. The first occasion was in the case of a successful treatment programme for a hyperactive boy (Patterson, 1965b). For this child a conditioning programme was very effective in modifying some classes of deviant behaviour. However, both during, and following termination of the programme, the parents and teachers reported continued changes in a wide spectrum of social behaviour. For want of a better term, this phenomena has been labelled as a 'chain reaction' or 'avalanche effect'. At this point, little is known about these chains. On some occasions they seem to involve a simple two-stage reaction. For example, as a result of a behaviour modification procedure, the child may become less obnoxious. Then the peer group begins to interact with him at a higher rate. This interaction in turn results in the strengthening of a large number of socially adaptive behaviours. These effects, in turn, accelerate the rate of interaction with the peer group, which, in turn, accelerates the socialization process. A conditioning programme using a dozen bags of M & M's was only responsible in the sense that it initiated the first step in an extremely complex process.

The initiation of similar chain phenomena has been observed in the families we have treated. In one case, the contribution of the behaviour modifier was simply that of providing a 'time out' procedure for a very anxious and angry mother to use in controlling the behaviour of a hyperactive boy. When the behaviour of the child was out of control she placed him in the bathroom, and thus effectively removed him from reinforcement for such behaviour. In his case, his younger brother offered a plentiful supply of social reinforcers for his obstreperous behaviour. The technique was immediately effective in this respect. This was followed by a reduction in the output of the mother's shrill, scolding, punitive behaviour directed toward all her children. As she gave up her role as a contemporary Xanthippe this, in turn, probably produced a somewhat more pleasant household so that the father was inclined to spend more time there.* Also, because of the changes in her behaviour, he could now be more positively reinforcing to her. From her reports, she eventually felt less deprivation of social support and experienced a marked reduction in anxiety. We observed an increase in her use of positive social reinforcers to control the behaviour of the children in the family. For the first time in months she felt safe in leaving the house to go shopping; she also terminated her use of tranquillizing medication and enrolled in a ladies' club. Obviously many variables could have contributed to these changes. It is also obvious that teaching the mother to use a 'time out' procedure could *not* directly produce all of these dramatic changes. The use merely *initiated the first step in a chain reaction*. The (unpredictable) end result of this programme was the dramatic remission of symptoms of both mother and child. By and large

*Even our limited experience in making observations in the homes of families being treated suggests the ubiquitous presence of a syndrome of maternal behaviour which we have labelled as 'Xanthippe'. This woman seems to use aversive techniques to control the behaviour of most of the people in her immediate environment, including my observers. She seldom, if ever, attends to the occurrence of socially adaptive behaviour in her child, and when she does, states, "That is what he ought to do. Why should I reward him for that?" The 'lack of attending' and 'lack of rewarding' make her a very unpleasant person, and one that we believe turns out deviant behaviour at an impressive rate.

these chain reactions retain an impressive element of 'unpredictability'. It is this latter quality that merits investigation.

To some unknown extent, the traditional components of a clinical relationship were present in this experiment and may have contributed to the efficiency of the procedures. However, it is of some interest to note that during the first three or four weeks of the experiment the mother seemed to be less than enthusiastic in her reaction to our arrival each morning. She also seemed to find frequent occasions for being absent when we wished to make our observations. It was our general impression that there was little 'warmth' to the relationship of the parents to the experimenters until the conditioning programmes began to have some obvious impact in changing the behaviour of the child. At this point, then, it is as likely that effecting an improvement in the child facilitated the formation of a relationship, as forming a relationship facilitated the use of the conditioning programme.

SUMMARY

The hypothesis was presented that the behaviour modifier should focus his efforts upon altering the social environment in which the child lives rather than directly upon the deviant child. Within such a framework, alterations in the reinforcement schedules being used by the parents, or the peer group, would produce changes in the behaviour of the child.

A set of procedures were described which altered the schedules of reinforcement used by the mother and father, and altered multiple sets of deviant behaviour in their 6-year-old son. The procedures were specifically designed to alter non-responsiveness, negativism, and extreme withdrawal. The data provided showed changes in such behaviour.

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SOME PROBLEMS OF STUDIES CONCERNED WITH EVALUATING THE PREDICTIVE VALIDITY OF INFANT TESTS

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"It is now well established that we cannot predict later intelligence from the scores on tests made in infancy" (Bayley, 1965, p. 806). This statement from one of Nancy Bayley's most well known papers was based on the fact that most of the early studies reporting correlations between scores on infant tests (here defined as developmental or intelligence test scores obtained before 2 years) and later follow-up I.Q. tests have generally been very low. For example, the coefficients Bayley (1949) reports for her own Berkeley Growth Study when test scores obtained up to 24 months were correlated with intelligence test scores received between 5 years and 18 years ranged from -0.13 (2 months with 6 years) to $+0.55$ (21 months with 18 years), values clearly too low to be used in regression equations for predictive purposes. Most other early researchers (e.g. Anderson, 1939; Furfey and Muehlenbein, 1932; and Nelson and Richards, 1939) have reported similar findings. More recently (e.g. Simon and Bass, 1956; and Knobloch and Pasamanick, 1966) investigators have quite appropriately questioned the conclusions arrived at by many of the early researchers. For example, most early studies make use of normal or superior children while several recent studies of the last decade have attempted to show the diagnostic or predictive usefulness of infant tests if defective or retarded children are included in the sample.

It is not the purpose of this paper to evaluate the usefulness of infant tests. This has been reported elsewhere (Thomas, in press). Rather, it is the intent of this paper to focus on frequently encountered methodological and statistical limitations of studies using infant tests for predictive purposes. By focusing on these limitations it is hoped that future research may avoid the difficulties so that the value of infant tests may be more clearly recognized.

While not necessarily independent of each other four broad problem areas concerned with sampling, population base-rates, grouping of data for analysis, and use of impressionistic data can be identified. Each will be illustrated with examples from the literature. A discussion will follow in which some suggestions will be made toward eliminating these problems.

SAMPLING

Most psychological research is done with the expectation that the research findings can be applied to much larger groups of subjects similar to those used in the

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research study. Since the generality of research findings is limited by the sample upon which they are based, ideally this should be drawn at random from a population with known characteristics so that statistics can be used to make inferences about the population sampled. This situation has really never been achieved in infant research. Often necessarily, the subjects represent those available and convenient for research what Kessen (1960) has called "unsampled" samples. Hopefully, such "unsampled" cases will be described in sufficient detail so that inferences may be *logically* drawn from the reported findings. Unfortunately, however, the samples employed in infant testing research are often inadequately described so that the population sampled has unknown characteristics; also the samples are often extremely selective. Such circumstances can be achieved in several ways but the result in each case is to make difficult, if not impossible, meaningful generalizations from the reported findings. For example, Cavanaugh *et al.* (1957), in a validation study of the Cattell, included in their sample normal infants, some premature and postmature babies, and newborns with a variety of birth difficulties (some born by Caesarean section, etc.). Generally, the report considers the subjects as if they were sampled from a common population, since test results, except for birth weight differences, are not considered in relation to status at birth. The population would seem to represent a heterogeneous pool of infants with unspecified numbers possessing a variety of physical defects and differences. The characteristics of the parent population, or populations are really unknown. At best, the population appears to be highly atypical, thus limiting the generality of the study's findings.

Even when an attempt is made to obtain a representative sample from a large population, difficulties can and do occur. In Bayley's well-known longitudinal study she attempted to obtain a representative sample of infants from the English-speaking parent population of Berkeley, California. However, repeated testing of the Berkeley group suggests that her infant sample was very select. At no time were the Stanford-Binet I.Q. means for the group below 120 (Bayley, 1949). Thus, the very low infant and follow-up test correlations Bayley reports may not represent correlations sampled from more typical populations, as correlations based on select samples displaying a restricted range of scores on either one or both test score distributions will cause r to be relatively low.

More disconcerting are studies where the sampling and data analysis procedures may be correlated with the hypothesized infant test and follow-up test relationships. The popular retrospective methodology in which researchers search files for children who, when tested as infants, met certain characteristics is particularly vulnerable on this point. Simon and Bass (1956), in a frequently cited study, attempted to show the predictive validity of infant tests by examining files of 3000 children tested when they were infants. Their samples, representing children selected partly on the basis of age at testing, averaged about fifty children. The authors report no attempt to compare the children selected with the remaining group approximating 2950. Has the authors' sampling procedure capitalized on chance, thereby maximizing the relationship between infant test and follow-up test scores which they hoped to find? The effect of Escalona and Moriarty's (1961) procedure is similar. They started with a sample of 128 children about whom little is known except that they met some unspecified criteria of "normalcy". All children were tested as infants, but only seventy were

subsequently followed-up. However, the report concerns only fifty-eight since the authors wished to include only children with "valid" tests obtained under "optimal circumstances". This group of fifty-eight was, on the basis of *post hoc* analysis, halved, so that the authors' final conclusions are really based on twenty-nine children. Like Simon and Bass, the authors fail to consider the hypothesis that their procedure may not be statistically independent of the relationship between infant test scores and follow-up test scores which they claimed to have demonstrated. Even if the authors had dealt with this problem, the final sample represents children from a population tested after 20 weeks of age and under "optimal circumstances", and "who met some criteria of normalcy": certainly a restrictive and atypical population. Incidentally, it should be mentioned that in any "file searching" study there is a danger of obtaining a biased follow-up sample. Even in studies where an attempt is made to compare infant test records of those followed-up with those eligible but not followed-up (e.g. MacRae, 1955; and Wittenborn *et al.*, 1956) there is no guarantee that a biased sample has not been selected. More realistically, the follow-up sample will represent children from a population whose parents can be contacted, who are in close proximity, and who will cooperate. More meaningful psychological parameters of such populations are difficult if not impossible to come by.

POPULATION BASE-RATES

The importance of considering population base-rates (i.e. the frequency of an event in a population) when evaluating the classification efficiency of tests has been emphasized in an important paper by Meehl and Rosen (1955).

As an illustration, suppose in a population of 1000 infants 80 per cent would, at maturity, be retarded. The remaining 20 per cent would be normal. Suppose, further, that a test is available which can accurately identify as infants 85 per cent of those children who will be retarded at follow-up (the true positives) and accurately identify 70 per cent of those infants who will be normal at maturity (the true negatives). Such a test would be an exceedingly good one. Table 1 illustrates the efficiency of the hypothetical test for the 1000 infants. Note that in Table 1 the infant test correctly classifies twenty more persons (i.e. a total of 820) than would be correctly classified if all 1000 persons were classified as retarded without the use of any tests. In that case

TABLE 1. CLASSIFICATION OF INFANTS FROM A POPULATION WITH SPECIFIED BASE-RATE USING A TEST WITH SPECIFIED EFFICIENCY

Predicted status	Status at maturity	
	Retarded	Normal
Retarded	680* (85%)	60† (30%)
Normal	120† (15%)	140* (70%)
Total	800	200

*Correct classifications.

†Incorrect classifications.

200 normals would be called retardates. The test does, however, misclassify 120 retardates. Even in this example where the test efficiency does exceed base-rate classification (probably an atypical situation) it might not be worthwhile retaining the test instrument. The seriousness of different types of classification errors (e.g. missing 120 retardates), the cost of testing, and the relative gain in correct classifications, are issues needing consideration in any decision to retain or discard the instrument.

With claims now being made that infant tests are useful for identifying intellectual inferiority often in apparently deficient infant populations, the importance of evaluating test efficiency against base-rate classification takes on increasing importance. It is therefore distressing to realize that this problem has been ignored. One study reported by Illingworth (1961) perhaps best illustrates the problem. Among the children seen by him during their first year he reports that, using his own version of the Gesell (Illingworth, 1963), he diagnosed 122 children as retarded. Several years later eighty-seven of these children were tested. During the interim, thirty died and five could not be located. Illingworth reports no correlations, but of those eight-seven followed-up fifty-one had I.Q.s below 50, while only six had scores of 100 or more. On the basis of these findings he concluded that mental inferiority can, with the Gesell test, be diagnosed within the first year.

It can certainly be hoped that Illingworth is right. But his data do not appear to justify this conclusion. He mentions (Illingworth, 1961) the desirability of knowing the follow-up status of those infants evaluated by him but diagnosed as normal. He adds that the numbers involved preclude this possibility. Yet, such a follow-up would be essential for determining if Illingworth, with his Gesell test, is exceeding base-rate accuracy. It does appear that the sample referred to him for diagnostic testing had an exceedingly high base-rate for retardation and physical or neurological defects since his infants were very abnormal children, as is evidenced in part by the high death-rate.

Clearly, claims that infant tests are useful for identifying mental deficiency cannot be evaluated apart from knowledge of the population base-rates to which the test is applied.

GROUPING OF DATA

In Bayley's research, as in most early research, the degree of relationship that existed between infant tests and follow-up tests was usually gauged by the size of the correlation coefficient. These correlations were generally calculated on the actual pairs of infant I.Q. or D.Q. and follow-up test scores. Recently it has been claimed (Simon and Bass, 1956; MacRae, 1955; and Escalona and Moriarty, 1961) that such correlational procedures can be misleading and necessarily restrictive. What is important, it is argued, are not the actual test-score correlations that exist but rather whether, for example, a child classified as "dull" (representing a broad range of possible test scores) retains or changes his classification at follow-up. In part, the distinction is between linear prediction along a continuous variable and accuracy of diagnostic classification.

While this argument seems reasonable, difficulties are displayed in the studies which promulgate this approach. One problem is statistical. For example, Simon and

Bass (1956) report as a measure of association contingency coefficients derived from χ^2 . Their coefficients are undoubtedly in error. Many of the expected frequencies in their 3×3 contingency tables were below five and some were below one! The effect on the obtained measures of association (the contingency coefficients) with these low expected frequencies is difficult to predict. MacRae (1955) ran correlations on data grouped into five intervals but reported no correction for grouping of data; therefore, his correlations are probably in error; the values may be too low, or too high (see Kelley, 1923, p. 167-172).

A serious difficulty which has not received attention concerns how broad the classification categories can be, and yet remain psychologically meaningful. The broader the categories, the more individual variability in test scores from infancy to follow-up can be tolerated, before a child changes his classification. Therefore, the greater the likelihood of showing the diagnostic validity of infant tests. Should the categories be ten test-score points wide (Illingworth, 1961), much broader (Simon and Bass, 1956), of equal or unequal width (MacRae, 1955), and where should the boundaries between the categories be located? These questions are related to the nature of the overt behaviour that implicitly is being predicted, and that the examiner hopes the test scores will reflect. This issue is an important one but so far has not been discussed. (It is unfortunate that infant intelligence test researchers have been almost entirely preoccupied with using follow-up I.Q. tests as criterion measures and not more meaningful kinds of overt behaviour.)

USE OF IMPRESSIONISTIC DATA

It is apparent that subjective clinical impressions play an important role in infant testing, for most studies allude to them. Many researchers (perhaps most) select for emphasis those infants who have responded in some favourable way to the testing situation (e.g. Cavanaugh, *et al.*, 1957; Escalona and Moriarty, 1961; and Gallagher, 1953). Most frequently these subjects are referred to as those "validly" tested. Just what constitutes a valid or invalid infant test is far from clear, and in the absence of empirical data to the contrary it seems safe to assume that judgments of infant test validity are likely to be quite variable. Besides representing another source of variance in the research, such judgments of validity add another sampling constraint. It is surprising in how many different ways clinical impressions can contribute to test scores. Drillien (1961) arrived at infants' estimated D.Q.s by noting not only the child's behaviour to *selected* Gesell items, but contributing to the obtained D.Q. were variables such as type of home setting, judged opportunity for speech, and judgments of what the child heard at home. Additionally, the examiner gave the child only items on which "some degree of success was to be expected". Where failure was expected, the items were "diplomatically" avoided. The degree to which objective-test items contributed to the reported test-score correlations in Drillien's study is impossible to ferret out, although the generally higher correlations reported in Drillien's study may have been due in part to the relatively wider range of talent in the sample.

Occasionally, what are reported as relations between infant and follow-up tests are more accurately described as relations between examiner judgments. MacRae (1955) concluded that infant tests have "definite value in the prediction of later

mental ability" (MacRae, 1955, p. 118) but actually the data were comparisons between examiner ratings of infant and follow-up tests and not D.Q. or I.Q. test scores. The effect of the Escalona and Moriarty (1961) procedure appears to be quite similar, and like MacRae's study, is susceptible to misinterpretation. Finally, Simon and Bass (1956) actually boosted an infant's estimated I.Q. if test records revealed information suggesting that the child's test score was below his "real potential". Such an arbitrary treatment of data is certainly unwarranted.

It may be, as Escalona and Moriarty (1961) contend, that clinical appraisal of baby's responses is more important in contributing to predictability of later test scores; but just what clinical impressions, and how these impressions can be maximized for effectiveness in prediction situations, has not been made clear (Sawyer, 1966).

DISCUSSION

The solutions to the above problems are not all simple ones; some suggestions can be offered, but no claim is made to be able to provide panaceas. However, effort must be directed toward the solution of the problems if any meaningful understanding of the values of infant tests are to be achieved.

Sampling problems plague much psychological research. Even if adequate sampling cannot be achieved, understanding can be facilitated if authors would describe more completely the characteristics of their samples. Rarely are test score standard deviations given, yet range of talent and other factors clearly affect the correlations (see e.g. McNemar, 1962). Additional yet minimal information should include how the sample was drawn, ages at testing, sex and socioeconomic measures such as parents' occupation, education, and income level data. This information is frequently available from clinic records. In "file searching" retrospective studies such as Simon and Bass's (1956), some defence needs to be offered which attempts to demonstrate that the sampling procedure is statistically independent of whatever test score relationships exist. As a minimum, this defence should include group comparisons between those infants sampled and the remaining pool of unsampled subjects.

The determination of population base-rates should not be difficult. Often clinic files will provide sufficient data so that base-rates can be estimated as in adoption agency follow-up studies. While Illingworth (1961) may not find it practically or economically feasible to follow-up all children tested as infants but not diagnosed as retarded, he should at least have sampled from his pool of those diagnosed as normal to estimate the base-rate of retardation for the population he samples. Unless base-rates are assessed, such data as Illingworth has presented will remain ambiguous.

Those inclined to prefer analyses of data grouped into broad categories need to provide some rationale for the meaningfulness of the width and number of categories used. Also, attention needs to be given to the statistical problems associated with such analyses. To pacify those unhappy with such procedures (e.g. Knobloch and Pasamanick, 1966) it is suggested that Pearsonian correlations based on raw scores be reported along with the means and standard deviations of both variables being correlated.

Understanding the relative contribution of impressionistic data to infant test score performance is a difficult problem. Part of the trouble hinges on the too

frequent lack of good objective scoring criteria, a difficulty frequently voiced by those who use infant tests (Stott and Ball, 1963). Efforts are being made, however, to "tighten-up" the scoring criteria (e.g. Bayley, 1966b). Also, emphasis is now being given to the problems of reliability of observation and adequate training of examiners. For example, Knobloch and Pasamanick (1960) have shown that following extensive training with the Gesell, inter-observer agreement is almost perfect. It would be useful for Knobloch and Pasamanick to put in writing, or even better, show in a film, the individual item scoring criteria which they teach. Such a contribution would go far towards standardizing Gesell's testing procedure.

There remains the difficult problem of measuring the validity of infants' test performance. So far estimates of validity have rested on examiner judgments which are probably based on a baby's general activity level, affect state, whether he cried, etc., during testing. One possible approach to the objectification of these behaviours is Bayley's Infant Behaviour Profile (Bayley, 1966b), a series of rating scales for evaluating each child after testing. Until such procedures as Bayley's are generally available, descriptions of infant behaviours which determine examiner judgments of test validity, as Hindley (1965) has reported are helpful and should be included in publications. The problem still remains, however, as to what should be done with an invalidly tested baby. Rejection of the baby from the sample or adjustment of test scores are both unattractive alternatives. Perhaps the best solution is to reassess as soon as possible all infants whose performances are judged invalid. Parenthetically, it is noteworthy that children whose test performances are judged of questionable validity do not tend to give invalid tests on successive occasions any more frequently than other infants (Hindley, 1965).

The focus of this paper has been on methodological problems associated with infant testing research. While it is unfortunate that many of the studies purporting to demonstrate the predictive usefulness of infant tests seem too often to be the studies that are weak methodologically, this situation is by no means universally the case. For example, Knobloch and Pasamanick (1966) reported impressive multiple correlations using Stanford-Binet scores at school age as the criterion variable. Weighted predictor variables included Gesell scores obtained below one year and measures of socioeconomic and physical status. In a group of 123 children, representing a wide range of talent, the multiple correlation they reported was 0.84. It is interesting to note that, in an area in which success is so frequently measured in terms of the size of the reported correlation coefficient, it is rare to find reported study in which multiple correlation is used. Further exploration of multiple regression techniques seems in order. There are indications that measures of infant language or verbalization obtained before two years, at least for girls, correlate better with follow-up scores than do full-scale infant test scores (Bayley, 1966a; and Moore, 1967). So far, however, the size of the correlations reported have been around sixty, thus precluding individual prediction. Quite possibly, however, measures of language weighted with other predictor variables such as socioeconomic status might have potential for possible individual prediction. Finally, the use of infant tests in basic research studies shows promise. Freedman and Keller (1963) demonstrated quite clearly that infant test scores could distinguish between pairs of monozygotic and dizygotic twins within the first year.

SUMMARY

Studies evaluating the predictive validity of infant intelligence tests often display limitations related to four problem areas needing attention: sampling, population base-rates, grouping of data, use of clinical impressions. Each problem area was briefly discussed within the context of studies displaying the difficulty. It was maintained that the predictive usefulness of infant tests cannot be properly evaluated until solutions to these problems are forthcoming. Towards this end, some suggestions for eliminating the difficulties were offered and several studies in which infant measures had been more effectively used were discussed.

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PROGNOSTIC FACTORS IN CHILD GUIDANCE PRACTICE

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THERE have been few attempts in Britain to follow psychiatrically disturbed children through into adult life. As Warren (1960) points out, the lack of such longitudinal studies has led to a hiatus between child and adult psychiatry and consequently the relationship between the two is by no means clear. The purpose of this investigation is to follow-up by questionnaire the children treated at a child guidance clinic 10-15 years previously, and to determine whether any particular factors concerning the child, his background, or family, have prognostic significance.

Children receiving psychiatric treatment have been followed-up by several workers in the United States, among them Morris *et al.* (1954), O'Neil and Robins (1957 and 1958), Morris *et al.* (1956) and Masterson (1956 and 1958). In this country Warren (1960, 1965) has studied the outcome of adolescent in-patients at the Bethlem Royal Hospital and Annesley (1961) has followed-up adolescents at St. Ebba's Hospital, Epsom. Follow-up studies were done by Wolff (1961) on a group of patients who attended the Maudsley Hospital when they were of pre-school age and by Beedell (1955) on children attending a Bristol Child Guidance Clinic.

MATERIAL AND METHOD

A questionnaire was sent to the parents or guardians of every child taken on for out-patient treatment at the Department of Child Psychiatry, St. George's Hospital, London, during the five-year period 1949-1953. During these years 684 children were interviewed at the clinic and 424 of them were accepted for treatment. Most of the remaining 260 had been referred for diagnostic interview only, for court reports, for advice concerning placement or for special investigations. A few children were considered either to be unsuitable for treatment, or not to require it.

Of 424 questionnaires sent out, many were returned with the envelope marked "gone away" or "house demolished", and efforts were made to trace these families through London County Council and Borough Councils, the schools the children had attended, and various social agencies. Excluding 4 children who had since died and 2 whose parents declined to complete the questionnaire, information was received concerning 299 children, 188 boys and 111 girls.

The questionnaire dealt with education, employment, social adjustment and medical history (see Appendix). Reports were obtained from all the doctors who treated children who had further mental disorder. Interviews were not offered to the parents, but 9 mothers were seen at their own request.

The information obtained was used to divide the patients into two groups:

- (a) those who had no further difficulties since discharge from the clinic.
- (b) those who had further psychiatric and/or social problems.

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The case notes of the 299 children were then examined by the author and various factors which were present in most of the case histories were selected and related to the follow-up information in an attempt to identify significant prognostic features. The following items were extracted: age at onset of symptoms and at referral to the clinic, I.Q., birth history, legitimacy, home state, early separation from mother, relationship with other children, ages and social class of parents, number of siblings, position in the family, family history of mental illness, length of treatment, disposal, estimate on discharge and diagnosis.

"Home state" was divided into three categories, (a) intact, (b) broken by the absence of one or both parents and (c) intact but with gross parental disharmony. "Early separation from mother" referred to separation of more than 2 weeks while the child was under 5 years old.

The department did not usually attach a single diagnostic label to its patients, but for purposes of convenience they were divided into four groups: (a) organic conditions and/or psychosis, (b) psychoneurotic disorder, (c) psychosomatic disorder, (d) behaviour disorder. The division serves only as a rough guide, several children having multiple symptoms which overlap into two or three groups.

RESULTS

Comparison of responders and non-responders to the Questionnaire

The children whose parents completed the questionnaire did not differ significantly from the rest on any of the variables extracted from the case notes by χ^2 tests. (Table 1.)

TABLE 1. NON-SIGNIFICANT DIFFERENCES BETWEEN RESPONDERS AND NON-RESPONDERS

Item	Responders (N=299)	Non-responders (N=119)	χ^2
Average age of onset of symptoms	6 yr 4 months S.D. = 3.55 yr	5 yr 0 months S.D. = 3.64 yr	
Average age at referral to the clinic	9 yr 4 months S.D. = 3.30 yr	8 yr 10 months S.D. = 3.42 yr	
Mean I.Q.	106.5 S.D. 15.50 yr (range 64-162)	101.4 S.D. 12.82 yr (range 58-148)	
Birth history	162 (54%) normal births 100 (33%) physical complications 8 (3%) maternal mental illness 29 (10%) not known	71 (60%) normal births 35 (39%) physical complications 6 (5%) maternal mental illness 7 (5%) not known	1.08 $df=3$
Legitimacy	291 (97%) legitimate 8 (3%) illegitimate	112 (94%) Legitimate 7 (6%) illegitimate	2.53 $df=1$
Home state	179 (60%) home intact 89 (30%) broken home 31 (10%) gross parental disharmony	67 (56%) home intact 37 (31%) broken home 15 (13%) gross parental disharmony	0.18 $df=2$

Early separation from mother	122 (41%) separated 177 (59%) not separated	45 (38%) separated 74 (62%) not separated	0.32 <i>df</i> =1
Relationship to other children	162 (54%) good relationship 110 (37%) poor relationship 27 (9%) not known	70 (59%) good relationship 39 (33%) poor relationship 10 (8%) not known	1.17 <i>df</i> =2
Average age of father at child's birth	28 yr S.D. 5.23 yr	27 yr S.D. 5.01 yr	
Average of mother at child's birth	25 yr S.D. 4.88 yr	25 yr S.D. 5.12 yr	
Social class of parents	36 (12%) Class I 48 (16%) Class II 121 (40%) Class III 45 (15%) Class IV 49 (17%) Class V	10 (9%) Class I 16 (14%) Class II 48 (42%) Class III 12 (10%) Class IV 29 (25%) Class V	0.54 <i>df</i> =4
Average number of siblings	1.4 S.D. = 1.09	1.7 S.D. = 1.21	
Position in family	68 (23%) only child 78 (26%) eldest child 95 (32%) youngest child 58 (19%) a middle child	35 (29%) only child 27 (23%) eldest child 38 (32%) youngest child 19 (16%) a middle child	0.72 <i>df</i> =3
Family history of mental illness	135 (45%) positive 143 (48%) negative 21 (7%) not known	50 (42%) positive 64 (54%) negative 5 (4%) not known	0.32 <i>df</i> =2
Average length of treatment	13 months S.D. = 4.80 months	10 months S.D. = 4.52	
Disposal	218 (72%) discharged 35 (12%) lapsed 17 (6%) moved away 24 (18%) residential school 5 (2%) in-patient treatment elsewhere	77 (65%) discharged 19 (16%) lapsed 12 (10%) moved away 6 (5%) residential school 5 (4%) in-patient treatment elsewhere	2.07 <i>df</i> =4
Estimate on discharge	31 (10%) much improved 177 (59%) improved 91 (31%) no change or worse	7 (6%) much improved 70 (59%) improved 42 (35%) no change or worse	0.77 <i>df</i> =2
Diagnosis	32 (11%) organic and/or psychosis 62 (21%) psychosomatic disorder 73 (24%) psychoneurotic disorder 132 (44%) behaviour disorder	8 (7%) organic and/or psychosis 20 (17%) psychosomatic disorder 31 (26%) psychoneurotic disorder 60 (50%) behaviour disorder	0.83 <i>df</i> =3

Information obtained from the Questionnaire

Of the children 203 (67.9%) had had no further difficulties reported by parents at the time of follow-up, and 96 (32.1%) had had further psychiatric and/or social problems. Of the 96 children with difficulties 44 had received further psychiatric treatment; the diagnosis made by the doctors treating them were: anxiety state (12 cases), schizophrenia (9), psychopathy (4), personality disorder (4), psychosomatic illness (4), mental deficiency (3), epilepsy (3), depression (2), post-encephalitic personality change (1), behaviour disorder (1), and "nervous debility" (1). Of the remaining 52 children, 18 had been in trouble with the police, 11 had very poor work records and 5 had broken marriages. Two girls had borne illegitimate children and 2 others were sexually promiscuous. Other difficulties included social isolation, drunkenness, temper tantrums, pilfering from the home, financial irresponsibility, and disturbed family relationships.

Each of the items extracted from the children's case notes was related to the follow-up information in order to determine whether any were of prognostic significance, the χ^2 test being employed in each case. Details of those factors which were related significantly to outcome are shown in Tables 2-6.

TABLE 2. RELATIONSHIP TO OTHER CHILDREN

Item	Good relationship	Poor relationship	Total
No further difficulties	129 (80%)	56 (51%)	185 (68%)
Further psychiatric and/or social problems	33 (20%)	54 (49%)	87 (32%)
Total	162 (100%)	110 (100%)	272 (100%)

$$\chi^2 = 24.8, df = 1, p < 0.001.$$

Children who formed good relationships with their peers were less likely to have further psychiatric and/or social problems.

TABLE 3. FAMILY SIZE

Item	1 child	Information was available in all cases.				Total
		2 children	3 children	4 children	5 or more children	
No further difficulties	46 (68%)	99 (77%)	32 (65%)	16 (53%)	10 (43%)	203 (68%)
Further psychiatric and/or social problems	22 (32%)	30 (23%)	17 (35%)	14 (47%)	13 (57%)	96 (32%)
Total	68 (100%)	129 (100%)	49 (100%)	30 (100%)	23 (100%)	299 (100%)

$$\chi^2 = 13.98, df = 4, p < 0.01.$$

Children coming from larger families were more likely to have further psychiatric and/or social problems.

TABLE 4. DIAGNOSTIC CATEGORIES

Item	Information was available in all cases				Total
	Organic condition and/or psychosis	Psychoneurotic disorder	Psychosomatic disorder	Behaviour disorder	
No further difficulties	14	50	51	88	203
Further psychiatric and/or social problems	18	23	11	44	96
Total	32	73	62	132	299

$$\chi^2 = 16.78, df = 3, p < 0.001.$$

Children with psychosomatic disorders did better than those in the other categories and those with organic disease and/or psychosis did worse. In the latter category 6 of the 32 children had been diagnosed as psychotic and all but one of those had further psychiatric problems.

TABLE 5. DISPOSAL

Item	Information was available in all cases				Total
	Discharged	Lapsed	Moved Away	Residential school or I.P. treatment elsewhere	
No further difficulties	162	23	8	10	203
Further psychiatric and/or social problems	56	12	9	19	96
Total	218	35	17	29	299

$$\chi^2 = 22.49, df = 3, p < 0.001.$$

Children discharged from the clinic had fewer difficulties later and those sent to a residential school or for in-patient treatment elsewhere were more likely to have further trouble.

TABLE 6. ESTIMATE ON DISCHARGE

Item	Information was available in all cases			Total
	Much improved	Improved	No change or worse	
No further difficulties	26	130	47	203
Further psychiatric and/or social problems	5	47	44	96
Total	31	177	91	299

$$\chi^2 = 17.15, df = 2, p < 0.005.$$

Children rated "much improved" or "improved" on discharge had fewer difficulties than those estimated "no change" or "worse".

Non-significant prognostic factors were: age at onset of symptoms, age at referral to the clinic, I.Q., birth history, legitimacy, home state, early separation, father's and mother's age, social class, position in the family, family history and length of treatment.

DISCUSSION

Only 70.6 per cent of the questionnaires were completed and returned so it is difficult to know how far the results can be generalized. It is possible that dissatisfied parents would be less likely to reply and their children might have fared badly, although the non-responders did not differ very much from the responders as far as clinic data were concerned. Of the 119 who did not reply, 52 were known to have changed address and could not be traced, and it is possible that questionnaires never reached some of the remainder.

Of the children on whom follow-up material was received 67.9 per cent had no further difficulties; this figure is similar to the improvement rate found by Shepherd *et al.* (1966) in their comparative study between 50 child guidance clinic children and a matched group from local schools. These authors found that the behaviour of approximately two-thirds of the children in each group improved over a 2-yr period.

Morris *et al.* (1956), in their follow-up of 66 children with aggressive behaviour disorder, found that those children who had difficulty in mixing with their peers tended to do badly; this finding is confirmed in the present study.

Children from larger families did not do so well as those from smaller ones. This might be because mothers of big families seldom attend the clinic regularly themselves and did not take an active part in their children's treatment; socio-economic factors did not seem important in these cases. Cunningham *et al.* (1956) found that the only child tended to do well and the oldest child of the family badly.

There is little agreement on the relationship between symptomatology and prognosis, largely because no classification for childhood disturbances has been universally adopted. Morris *et al.* (1956) found that sexual acting out carried a poor prognosis, and Cunningham *et al.* (1956) and Masterson (1958) reported that psychoneurotic cases did well. In the present study psychotic children and those with organic conditions had a poor prognosis. Children with psychosomatic symptoms did best, but these included 21 cases suffering from nocturnal enuresis, a condition which usually clears up before adult life is reached.

The detrimental effect on young children of separation from their mothers has now been clearly established by Bowlby (1951), Yarrow (1961), and others, and this factor might be expected to be of prognostic importance. In this study 49 per cent of the children who experienced later difficulties had suffered separation compared with 37 per cent of those who had no further trouble, but the difference was not statistically significant. Home state had little bearing on prognosis, a fact noted by O'Neal and Robins (1957).

The incidence of mental illness in the family was very high; 47 per cent of the children who did well and 51 per cent of those who had further difficulties had at least one parent or sibling who had received treatment from a psychiatrist or

general practitioner for emotional disorder. It is possible that hereditary factors played some part here, although parents who were themselves familiar with emotional problems and psychiatrists would be more likely to recognize these conditions in their children and seek medical help for them. Rutter (1963) found that 1 in 5 of a group of children attending the Maudsley Hospital for psychiatric disorder had a mentally ill parent; the incidence was three times that in 2 matched groups of children attending paediatric and dental clinics respectively. An association between psychiatric illness in parents and children has also been found by Lewis (1954), Buck and Laughton (1959), Cowie (1961) and Doniger (1962).

SUMMARY

Out of a total of 424 children treated at a child guidance clinic 299 were followed-up 10-15 years later by questionnaire. Certain variables in the case notes were correlated with the follow-up information, in order to determine whether they were of prognostic significance.

At follow-up, 203 children had had no further trouble and 96 had experienced further difficulties; 44 of these had received further psychiatric help. Children who had good relationships with their peers did well; poor prognostic features were large families, discharge to a residential school or in-patient unit and an estimate of "no change" or "worse" on discharge. Children with psychosomatic disorders did well and those with psychosis and/or organic state did badly.

Non-significant prognostic factors included age at onset of symptoms, age at referral to the clinic, I.Q., legitimacy, birth history, home state, early separation, father's and mother's age, social class, position in the family, family history and length of treatment.

Acknowledgment—I would like to thank Dr. R. Moody and Dr. D. Howell for their help, encouragement and permission to investigate their cases. I am also indebted to Miss P. Parsloe, Psychiatric Social Worker, for her assistance in tracing some of the families.

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APPENDIX

Copy of the questionnaire sent to the parents

Name of the Child

Age

Address

- (1) At what age did he/she leave school?
- (2) What type of secondary school(s) did he/she attend?
(e.g. secondary modern, comprehensive, grammar, direct grant, private, public, special school).
- (3) Did he/she take any public examinations? If so, what results did he/she obtain? Please give details.
- (4) Has he/she had any further education? (e.g. night school, training or technical college, university). If so, has he/she obtained any special qualifications? Please give details.
- (5) Did he/she have any difficulties at school? If so, please give details.
- (6) Is he/she employed at present? If so, what is his/her job? How long has he/she held this job? What is his/her attitude towards this job?
- (7) What jobs has he/she had since leaving school and how long has each job lasted?
- (8) Has he/she ever been unemployed? If so, for how long and for what reasons?
- (9) Has he/she had any difficulties at work? If so, please give details.
- (10) How does he/she get on with the rest of the family? Please give details.
- (11) How does he/she get on with his/her friends? Please give details.
- (12) What spare-time activities does he/she have?
- (13) Is he/she married? If so, is the marriage satisfactory?
- (14) Has he/she any children? If so, give details of their age and sex.
- (15) Has he/she caused any trouble in the family? If so, please give details.
- (16) Has he/she been in any trouble outside the home? (e.g. been before the courts). If so, please give details.
- (17) Has he/she had any serious physical illness? If so, please give details.
- (18) Has he/she had any mental or emotional illness? If so, please give details and the name and address of the doctor who treated him/her.
- (19) Is there any further information you would like to give about your child?

On the questionnaire form, wide gaps were left between most of the questions in order to encourage parents to give full answers.

SUCCESSIVE MODIFICATION OF AGGRESSIVE BEHAVIOUR AND AGGRESSIVE FANTASY PLAY BY MANAGEMENT OF CONTINGENCIES

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INTRODUCTION

THIS report is an account of a field study involving the treatment of a highly aggressive nursery school boy with excessive fantasy play. Conventional clinical treatment of a behaviour problem of this intensity is usually based on the assumption that it is a symptom of hidden emotional disturbance. Hence most therapies are aimed at removing hypothetical 'underlying causes'. Client-centred play therapists stress allowing the child to express and 'act out' aggressive 'feelings', and the importance of acceptance of these feelings by the therapist. This relationship, together with the alleged cathartic effect, is said to provide an opportunity for the child to experience growth and self-insight with a resultant reduction in the aggressive behaviour (Haworth, 1964). Psychoanalytically oriented therapies also stress acceptance of aggressive behaviour by the therapist (Rosenthal, 1956; Schiffer, 1952), although some of these therapists give greater emphasis to the importance of setting 'limits' than others (Haworth, 1964). Regardless of the extent of the concern with limits, psychoanalytic therapies view the treatment of aggression in children in the context of 'resistances', 'defences', 'transference', and 'interpretations' (Finch, 1960).

The sparse literature on the treatment of aggressive behaviour based on principles derived from behaviour theory emphasizes the role of stimulus consequences in developing and maintaining aggressive behaviour. One treatment approach has been to modify parental behaviour, by training parents to provide social reinforcement for appropriate behaviour and to withhold or withdraw social reinforcement following aggressive acts (Hawkins *et al.*, 1966; Wahler *et al.*, 1965; Russo, 1964). Such training has taken place in the context of actual parent-child interaction in the clinic and home. Differential reinforcement procedures to modify aggressive behaviour in children have also been used in institutional, school, nursery, and summer camp settings (Burchard and Tyler, 1965; Brown and Elliott, 1965; Quay *et al.*, 1965). In these environments treatment involved changing the behaviour of the staff rather than that of the parents. Similar approaches have been used with self-destructive behaviour in disturbed children (Wolf *et al.*, 1964; Lovaas

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et al., 1965). These behaviour therapists all attempted to modify aggressive behaviour in the environment in which it normally occurred and treatment was relatively independent of historical considerations.

The procedures used in this report are based upon the modification of problem behaviour through the systematic manipulation of its consequences.

SUBJECT

The subject, Denny, was a 4½-year-old boy whose behaviour in a day-care centre, at home, and in the neighbourhood, was characterized by extreme aggressiveness, temper-tantrums and excessive fantasy play. His parents had been asked to withdraw him from the day-care centre which he had been attending for a year. The social worker at the centre described the child as 'not knowing reality from fantasy', and stated that he was frequently quite aggressive while engaging in fantasy roles. At home he used role-behaviours to get his parents to do as he wished. When they would not respond to him in a manner compatible with his fantasy role, he would have a violent temper-tantrum. The parents reported that they were not consistent in the ways in which they responded to Denny and were unable to handle him.

Denny was described by his teachers as an alert youngster with normal physical development. He had good motor co-ordination, well-developed speech patterns, and he was an articulate child. His attention span was described as short, and his skills with nursery school materials were said to be below average. He also lacked serviceable social skills; he did not play with other children other than in the context of some fantasy play in which he dominated the whole play sequence.

Denny's parents were young university students who were anxious to obtain help for their child and expressed eagerness to co-operate in the treatment programme.

Denny was enrolled in a small experimental remedial guidance school group for children with behaviour problems, which met for 2½ hr a day during the school year. The general objective was to modify the child's behaviour to enable him to participate in the activities of a normal school group. This goal was divided into the following specific components: (1) to reduce aggressive behaviour; (2) strengthen appropriate (non-fantasy) play; and (3) to teach other acceptable social skills.

PROCEDURE

During the first phase of the study, attention was devoted to attenuating aggressive behaviour; during the second, to modifying fantasy play behaviour. The procedure for reducing aggressive behaviour was continued during the second part of the study, and instructions in the development of acceptable social skills were given throughout the entire treatment period.

Aggressive behaviour.

Period A—Baseline. To determine the level of aggressive behaviour before systematic procedures to modify it were introduced, the following frequencies of aggressive acts were recorded over a 5-day period:

- (1) Physical assault: Hits, with hands or object, kicks, bites or attempts to bite, scratches, pushes, grabs, or pulls at, jumps on or throws objects at, other child or adult.

- (2) Destructive behaviour toward physical surroundings: Knocks materials off shelves, overturns furniture, throws materials or equipment, kicks doors, walls or furniture.
- (3) Verbal assault: Verbally threatens physical assault (as defined above), or threatens violent action against child or adult. Example: 'I'm going to kill you', or 'I'll cut your scalp off'. Verbally resists instructions, saying, 'I don't like you', or 'go away'.

The baseline period was limited to 5 days out of consideration for the other children's safety. Even under close supervision there was a possibility that Denny would suddenly throw a heavy object or attack another child, resulting in serious injury.

During this baseline period teachers followed procedures normally practised by nursery school personnel, including talking to the child about not hurting others, giving verbal instruction to stop undesirable behaviour, and using physical restraint.

The data were obtained by a trained observer assigned to Denny throughout the study. The recording technique, developed by Allen *et al.* (1964), involved recording the number of aggressive acts during ten-second intervals.

Period B—Contingencies for aggressive and co-operative behaviour. The treatment procedure consisted of withdrawing positive reinforcement following physical assault or destructive behaviour, and presenting positive social reinforcement for co-operative and friendly behaviour. Social reinforcement, defined in terms of the behaviour of a teacher, consisted of watching, speaking to, smiling at, touching, or offering play material, equipment, or special privileges or activities. Reinforcement was not withdrawn for verbal aggression.

The withdrawal of positive reinforcement consisted of removing Denny from the school room and placing him in a 'time-out' room immediately following each aggressive act which was not terminated after verbal instructions to stop. Teacher attention was minimized at such times, consisting only of the brief statement, 'You can't stay in the school room when you hurt people'. The child was left alone in the time-out room, observed through a one-way screen and intercommunication system, until he was quiet for 2 min. At the end of the time-out period he was returned to the school room without further comment about his behaviour. This procedure lasted for 47 class sessions, beginning on session 6 and ending on session 52.

Period C—Participation in a normal nursery group, and withdrawal from the group contingent upon aggressive behaviour. Denny participated in the regular 4-year-old nursery group in which three teachers worked with sixteen children. He was returned to the remedial group when an act of physical aggression was not immediately terminated after a verbal instruction. As before, no particular consequences were programmed for verbal aggressive behaviour. Intermittent social reinforcement from teachers was given for all co-operative, friendly, and appropriate social interaction with others on a non-systematic basis. Period C was continued for 29 class days (from session 53 to session 81), at which point the study terminated.

Fantasy play

Period A—Baseline. The baseline rate of Denny's fantasy play was recorded for 19

days. The first day coincided with the first day of Period B for aggressive behaviour in which differential contingencies were attached to aggressive and co-operative behaviours. Fantasy play was defined as explicit verbal statements referring to himself or to others as imaginary characters, or actions which carried out such a role once it had been verbalized. For example, if Denny made the statement that he was an Indian and carried around a drum, beating it, the time intervals during which he was using the drum were scored for fantasy play. (Fantasy play during music period, which normally included imaginary role-playing, was not scored as fantasy play.) Data were recorded in the same manner as for aggressive behaviour described above.

Period B—Differential contingencies for fantasy and appropriate play. Beginning on the 20th day no social reinforcement or attention was given when Denny engaged in fantasy play. Adults interacting with Denny, or in close proximity to him, left when he started to engage in it. On the other hand he was reinforced with attention for each observed instance of appropriate play. These conditions were in effect for 28 sessions (Sessions 20 to 37).

Period C—Reinforcement of appropriate play in the normal group. As previously mentioned, near the end of this study Denny was gradually admitted to the 4-year-old group. Social reinforcement for appropriate play was informally programmed in this group on an intermittent schedule, both for Denny and the other children, and coincided in time with Period C of the analysis of aggressive behaviour, except that data were collected for one additional day.

Social skills

An informal programme to teach Denny better social skills was instituted during the time Denny spent in the regular 4-year-old group. The teacher took Denny to the play yard of the 4-year-old group, and led him around by the hand, instructing him to say 'Hello' or 'hi' to individuals and groups of children. This was repeated for several days. Denny was then told to ask the other children what they were playing, and in the next step was also instructed to ask if he could play. He was returned to the remedial group when an act of physical aggression was not immediately terminated following a verbal warning. No particular consequence followed verbal aggressive behaviour alone. Each time Denny followed the teacher's instructions, he was praised by her. If he was accepted into the group the play was allowed to continue. This procedure was extended over 10 days. The time that he spent with the regular group was gradually increased.

Denny's imminent entrance into public kindergarten did not allow sufficient time to institute control periods. A 'reversal' condition during which the procedures in effect during the baseline periods were reinstated, or a period during which social reinforcement was delivered on a non-response-contingent basis, would have clarified the role of the contingencies programmed.

RESULTS

The reliability of recordings was evaluated by having a second observer record the occurrence or non-occurrence of aggressive and fantasy play behaviour in

10-sec intervals. Reliability checks made on 4 days early in the study and 3 days near the end of the study showed an average agreement of 93 per cent.

Aggressive behaviour

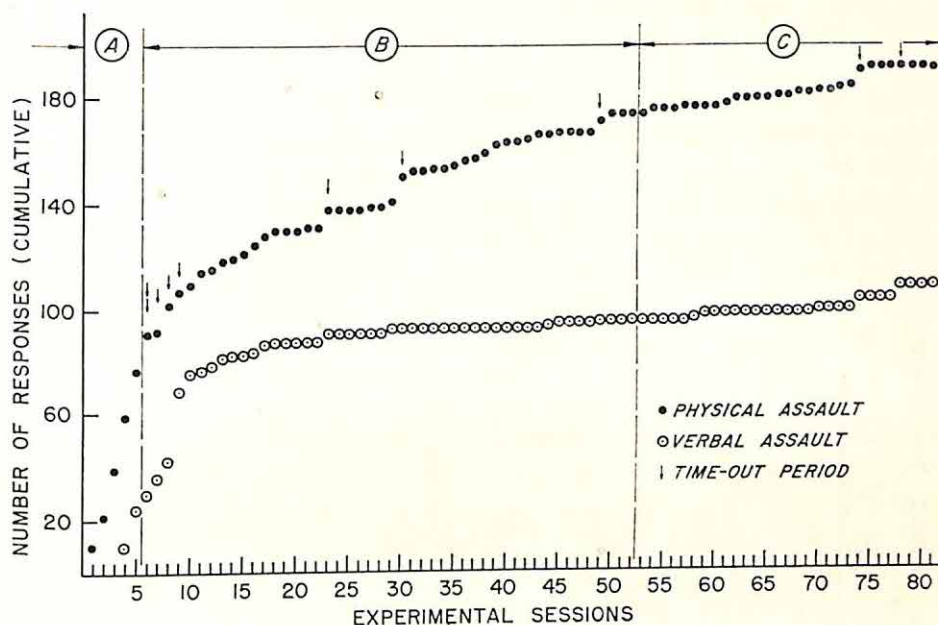


FIG. 1. Aggressive behaviours. Cumulative errors of the frequency of physical and verbal assault during period A (baseline), period B (planned contingencies), and period C (planned contingencies and participation in normal group). Each arrow indicates an instance in which Denny was placed in the time-out room.

In period 'A' (baseline) there was an average of 15 acts of physical assault a day (Fig. 1). Ninety per cent of these were directed at teachers and included hitting, kicking, biting and throwing objects. During this same period, 24 instances of verbal assault were recorded.

On the second day following the institution of contingencies (session 7), the frequency of physically aggressive acts dropped to 2. Each time Denny was taken to the time-out room is indicated by an arrow in panels 'B' and 'C'. The frequency of aggressive responses (physical assault) for the following 17 days averaged 3 a day. As is shown in panel 'B' (differential contingencies), the rate of verbal aggression decreased after the fifth day of this period, closely paralleling the decrease in physical aggression.

Increased physical aggression occurred on day 30. Other than that, there was a low and stable rate throughout the remainder of the study with a daily average of 3 such aggressive acts.

The relative infrequency of 'time-outs' indicates that on most days when several aggressive acts occurred, the behaviour was quickly terminated by verbal warnings. The longest time that Denny spent in the time-out room was 18 min; more typically he stayed there for 5 min. The first 2 or 3 times that he was escorted into the room

he engaged in tantrum behaviour, shouting, screaming and kicking. On those rare occasions that the room was used in the latter part of the study, Denny quickly settled down and waited until the teacher came to return him to the school room.

Both physical and verbal aggression remained at a constantly low rate, averaging not more than 3 such incidents a day when Denny was participating in the regular 4-year-old group, as indicated in panel 'C' of Fig. 1.

Fantasy play

As shown in Fig. 2, baseline data (period 'A') recorded over 19 sessions indicated that Denny initially engaged in fantasy play on an average of about 35 per cent of his time at school. His rate of appropriate play averaged 39 per cent during this time.

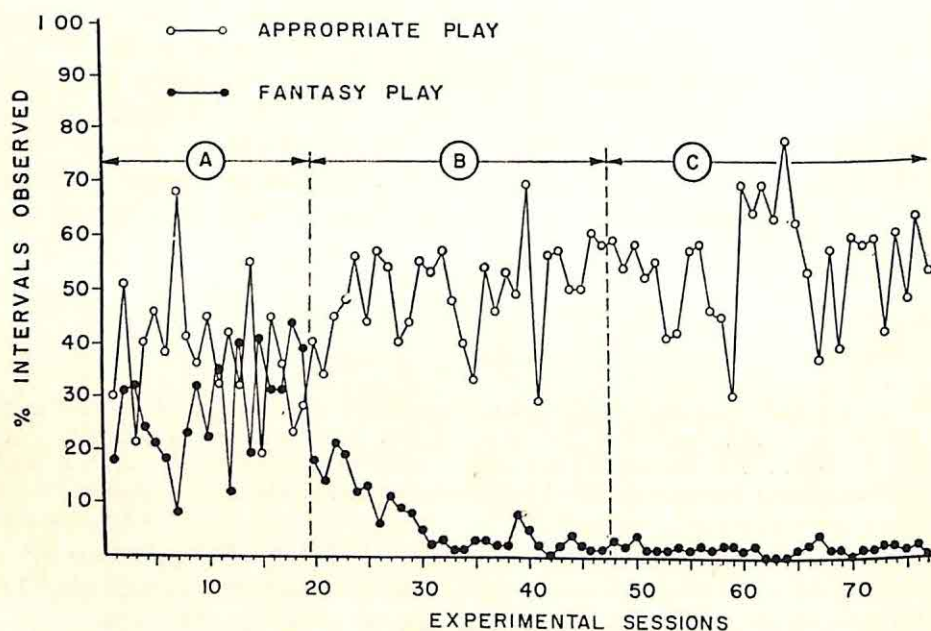


FIG. 2. Fantasy play. The frequency of appropriate play and fantasy play for period A (baseline) period B (differential contingencies), and for period C (differential contingencies and participation in normal group).

On session 20 and on all following days (period 'B'), social reinforcement was given for appropriate play and withheld contingent on fantasy play. Under this procedure Denny's frequency of fantasy play decreased rapidly during the first 11 days. By the eleventh treatment session Denny engaged in fantasy behaviour about 5 per cent of the time. During the remainder of this period, as well as during period 'C' (experimental contingencies, plus participation in normal 4-year-old group), covering sessions 31 to 77, fantasy play remained at about 4 per cent, and appropriate play increased to about 60 per cent of his time at school, averaging 51 per cent for the entire period after the baseline. Since Denny spent some time each school day moving between the remedial and the regular 4-year-old group, as well as contributing 20 min each day towards the standardization of a laboratory procedure, he had

fewer opportunities to engage in appropriate play activities. Therefore, the measure of time spent in appropriate play during the later phase of the study is conservative.

When Denny was admitted to the normal 4-year-old group to spend most of his school day, fantasy play continued at the low rate of about 3 per cent as shown in panel 'C'.

Social skills

Although the variability of conditions in the natural setting of the group situation precluded gathering formal data on the success of these procedures, the written records show that Denny did use the techniques that had been systematically taught him in his subsequent play with these children. During the last weeks of the study Denny spent almost his entire school session in the 4-year-old group. Fantasy play and aggressive behaviour remained low in the regular group. Denny was warmly accepted by the other children, though he was younger than most, and he made several friends who consistently welcomed him as a playmate.

He participated in the dramatic and imaginative play which were normally part of the activities of the 4-year-olds without resorting to his favourite power roles, and on many occasions explicitly verbalized the distinction between 'being' an imaginary person and 'pretending' to assume a role appropriate to the play of the others.

DISCUSSION

Aggressive behaviour in school

The procedures used in this study, planned to modify the subject's aggressive behaviour before attempting to change the fantasy play with which it appeared to be closely associated, provided an opportunity to determine whether aggressive behaviour could be treated independently of the fantasy play, and to investigate any possible relationship between the two behaviours. This plan of treatment represents a departure from the traditional clinical approach to behaviour problems associated with 'confused reality concepts', often assumed to be symptomatic of severe 'emotional' disturbances. The results are of interest since they show that the child's rate of aggressive behaviour was reduced in a short period by maintaining consistent consequences for aggressive behaviour, while fantasy play still continued at a high rate. It is significant that when the procedures to modify fantasy play were implemented, aggressive behaviour stayed at a low rate. As Figs. 1 and 2 show, consistently low and stable rates of both aggressive behaviour and fantasy play were maintained throughout the duration of the study, in both the remedial and the normal nursery school environment.

One provocative result of this study is the fact that the rate of verbal aggressiveness was positively correlated with the rate of physical aggression, although verbal aggressive behaviour was not subject to systematic contingencies. This suggests that for this child, the three classes of aggressive acts were not functionally separate behavioural classes.

The definition of aggressive behaviour did not allow for differential classification of aggressive acts according to their intensity, so that qualitative changes in the nature of Denny's aggressive acts are not shown in the recorded data. However, observers and teachers noted a marked diminution in the intensity and duration of aggressive

behaviours as the study progressed. Many of the aggressive incidents recorded during the second quarter of Denny's enrolment consisted of mild, brief episodes of striking at others, in contrast to the baseline behaviour which was characterized by severe hitting, kicking, biting, and throwing things.

Fantasy play in school

The rapid rate at which fantasy play diminished in strength when it was no longer reinforced with adult attention indicates the degree to which social consequences influence this behaviour. During the baseline period Denny consistently involved adults in his play, assigning them roles and dictating details of their participation. The types of roles that he played were almost always 'power figures' such as an 'Indian chief', 'leader of the people', or 'Superman'. His aggressive acts were almost always accompanied by statements explaining his actions in terms of his role. When teachers addressed him as 'Denny' he demanded that he be addressed as the character he was playing.

Since the remedial group offered very few opportunities for Denny to interact with children in play activities geared to his age, contact with children from the regular 4-year-old group was initiated during the sixth week of the study. A teacher from the regular group brought three of four children at a time for a short visit to the play yard used by the remedial group. Denny's approach to these children was frequently bizarre and inappropriate; he often attempted to play with them by making threatening statements related to a role that he was playing. On one occasion when he had painted his face like an Indian, he charged menacingly at the visiting children, and they laughed at him. This was immediately followed by a sudden attack on the nearest teacher. This incident accounts for the high rate of aggressive behaviours noted on the thirtieth day.

Aggressive behaviour and fantasy play at home

At the end of the first month of this study Denny's parents were asked to carry out the same procedures at home as were being implemented at school, and this consistent treatment at home and at school was probably an important factor in the rapid change observed in Denny's behaviour in the 42 months of the study.

During the course of the study, no new problem behaviours were observed in the nursery school or reported to be occurring in the home.

Social skills

Without experimental data it is difficult to estimate the significance of the training in social skills which Denny received. It certainly is possible that Denny would develop new ways of interacting with other children as a function of the different manner in which they might respond to him following the reduction in his aggressive and role-playing behaviour. Other more socially desirable behaviours which were already part of his repertoire, but competed out of existence by the problem behaviours, might have emerged without explicit tutoring. As the consequences of behaviour are usually maintained more consistently in a treatment environment than in home or school, occasional reinforcement for aggressive or fantasy behaviour is likely to occur with any child at home or school. The development of socially

acceptable skills which compete strongly with these problem behaviours seems one way of decreasing the probability of a so-called 'relapse,' and developing acceptable behaviour in strength after extinguishing undesirable behaviour seems recommended as a general strategy in many such situations.

Follow-up

Informal follow-up data were obtained by consulting with Denny's teachers in kindergarten, which he entered 3 months after this study terminated, and by having the observer-recorder who obtained data in the study observe Denny in this kindergarten. Formal data were not obtained as it was felt that the different conditions would invalidate them.

In the first several months of Denny's attendance in kindergarten his progress looked good, but then teachers reported an increase in aggressive behaviour, and transferred him from one class to another. Ten months after termination of the study the observer-recorder reported no fantasy play, and moderate aggressive behaviour. The observer-recorder stated that the aggressive behaviour was of a much lower rate and intensity than before the study, but certainly higher than most adults consider desirable in a child this age. She also reported that the teachers in kindergarten provided a great amount of attention for aggressive behaviour, and little attention for 'constructive' behaviours.

SUMMARY

Extremely high rates of aggressive acts and excessive fantasy play in a young boy were treated by systematic manipulation of their consequences in a remedial nursery school setting. In the first phase of the study, only the subject's aggressive behaviour was treated. In the second phase, fantasy play was modified while the procedures for controlling aggressive behaviour were continued. In both phases, tutoring in acceptable social skills was part of the treatment. Throughout the study, continuous frequency counts of the several kinds of behaviour were obtained by trained observer-recorders.

After a baseline period, in which the frequency of aggressive behaviour before systematic treatment was recorded, positive reinforcement (social) was withdrawn after occurrences of aggressive behaviour which did not terminate after one brief warning, and positive social reinforcement was delivered contingent upon friendly co-operative contact with others. Participation in a non-remedial group was then made contingent upon non-aggressive behaviour. Aggressive behaviour declined quickly when social reinforcement was made contingent upon its non-occurrence.

Fantasy play, defined in terms of explicit verbal statements referring to himself or others as imaginary characters, was similarly treated, and quickly dropped to a very low frequency.

In the latter part of the study an informal programme of tutoring in social skills was instituted.

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A NOTE ON RETARDED READERS IN DUNDEE

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INTRODUCTION

THIS paper reports a survey of the incidence of severely retarded reading in children of average or higher intelligence in the 9-year-old Dundee school population. The survey was the first part of a more detailed study of the nature of the reading disability in the non-readers discovered. The enquiry was confined to the ordinary schools in the city; the special schools for the deaf, partially sighted, and physically and mentally handicapped children were not included.

METHOD

Ascertainment of retarded readers

It was decided to define 'retarded readers' as those between $8\frac{1}{2}$ years and $9\frac{1}{2}$ years with a reading age below $6\frac{1}{2}$ years on the Burt Graded Vocabulary Reading Test (Vernon, 1938). Such children would be described as illiterate.

The group selected for investigation consisted of all children born between 15th April 1954 and 14th April 1955 who were in Dundee schools (both education authority and grant-aided).

In order to ascertain the retarded readers every primary school or department in Dundee was visited by an educational psychologist in the autumn term of 1963. Each class with children, or even one child, of the prescribed age was then investigated separately. The children in each class were graded by the teacher in order of reading ability, and beginning with the poorest reader in the required age group, the children were tested on the Burt test by the psychologist to a point considerably above $6\frac{1}{2}$ years, so that it was virtually impossible for a retarded reader to be overlooked. If the I.Q.s of the retarded readers were not already known through referral to the Child Guidance service, a Terman-Merrill Intelligence Test (Form L) (Terman and Merrill, 1937) was administered. Retarded readers with I.Q.s of 90 and over were then selected for further investigation.

In each case a control was selected from the same class. For this purpose, when each retarded reader was discovered, the name was noted of the child of the same sex nearest in age to the subject. The I.Q.s of the controls were not investigated at this stage, but they were assessed (using the Weschler Intelligence Scale for Children) during the later, fuller investigation of both retarded readers and controls. Two of the nineteen original "controls" were found to have I.Q.s of below 90 on this test. They were then replaced by the boy or girl next nearest in age, who became the control for this purpose of the study.

The Burt Graded Word Reading Test was selected because we were interested in any perceptual errors that the retarded readers made. The Vernon (Vernon, 1938)

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and Schonell (Schonell, 1942) Graded Word Reading Tests, similar in other respects to the Burt, start at a point from 1 to 1½ years more difficult than the Burt test and would have given zero scores in the more serious cases, so that the perceptual errors could not have been studied. Various comprehension tests involve more or less informed guessing and are useless in estimating the precise perceptual failure. The multiple-choice response to a picture suffers from the same disadvantage.

RESULTS

Amount of reading retardation

There were nineteen cases with a mean of 3·2 years retardation and a range of 2·1–3·9 years. The results are summarized in Table 1.

TABLE 1. AMOUNT OF READING RETARDATION

Extent of retardation (years : months)	Number of cases
2 : 1	1
2 : 6	2
2 : 7	2
2 : 11	2
3 : 0	1
3 : 2	3
3 : 3	1
3 : 6	3
3 : 7	1
3 : 8	2
3 : 11	1
	—
	19

As the retardation was evenly spread out between the two extreme figures there is no advantage gained in giving a standard deviation, particularly as the distribution is brought to an arbitrary stop by the prescribed upper reading age (6½ years).

Of the nineteen readers discovered, thirteen were boys and six girls.

Inspection of the errors made showed no consistent pattern. The answers resembled closely those obtained from younger subjects with the same reading ages and therefore little or no retardation. The cause of the retardation had therefore, in the majority of cases, to be sought in factors other than a particular perceptual weakness.

Incidence in the population studied

The exact number of children in Dundee schools born between the dates selected is not available, but the overall total of 2720 for the nearest school year (also covering children born over a full 12-month period) is likely to be very similar. Since only children with I.Q.s of 90 and over were considered, some 720 of the yearly population were excluded. Thus the incidence indicated by this study is approximately 1 per cent, and it is apparent that at an age when the average child can "read for meaning" one

out of every hundred is still illiterate and without special measures such as intensive remedial teaching is unlikely to become literate.

Attendance

As expected the attendance records of the retarded readers were, as a group, significantly poorer than those of the controls. Table 2 shows the absences as percentages of the total possible attendance for both the retarded readers and the controls (the attendance record of one of the controls was not available). In each case the percentage has been rounded off to the nearest whole number. It can be seen that fourteen of each group can be reasonably matched for attendance, and only the extremes are unmatched. This suggests that absence is but one factor and that it is an important factor only in a minority of cases.

TABLE 2. INDIVIDUAL ABSENCE PERCENTAGES

																			Mean	S.D. of Mean	
Retarded readers	35	22	20	17	13	12	11	10	9	9	9	9	6	5	4	4	3	2	1	10.6	18.5
Controls	16	15	10	9	8	7	7	5	5	4	4	3	3	3	2	2	2	1		5.9	1.0

$$t = 2.237 \quad P < 0.05$$

Social class

Since each child in the control group was selected from the same school as the corresponding non-reader it was expected that the social class distribution would be similar. It will be seen (Table 3) that the expectation was fulfilled, there being no significant difference between the two groups according to the Registrar-General's classification (General Register Office, 1960).

TABLE 3. SOCIAL CLASS (REGISTRAR-GENERAL'S CLASSIFICATION)

	I	II	III	IV	V
Non-readers	0	1	10	7	1
Control	2	2	10	5	0

DISCUSSION

We consider that the incidence of 1 per cent of non-readers reflects fairly accurately the situation in the population as defined. It is however certainly an underestimate of the total problem of retarded readers for a number of reasons. The first of these is that only children with I.Q.s of 90 or over on the Terman-Merrill scale were considered, and the number of retarded readers increases proportionally as one goes

down the I.Q. scale. Secondly, the degree of reading retardation chosen (approximately 3 years) was severe. If a reading age of 7, rather than $6\frac{1}{2}$, had been chosen a very much higher incidence could have been expected. Thirdly, children from special schools were excluded and indeed this is purely a study of the ordinary school population. Finally, no attempt was made to relate the reading level to I.Q. in selection of subjects; yet the child with an I.Q. of 120 and a reading age of 7 is underachieving to a greater extent than is one with an I.Q. of 90 and a reading age of $6\frac{1}{2}$.

Although only fourteen out of forty-one primary schools proved to contain children sufficiently retarded in reading to satisfy our criteria for this study, the 1 per cent incidence of non-readers is nevertheless alarmingly high. It means that while in any one school year there are about twenty severely retarded or potentially severely retarded readers, the total of such children between the ages of 5 and 15 is probably about 200. For the reasons already stated however this figure includes only some of the total group of children with serious problems in reading. This is in a city of 180,000 inhabitants and a school population of about 34,000.

Strictly comparable figures from other studies do not seem to exist, but the Ministry of Education (1957) reports that 1 per cent of a sample of 11-year-old school children in England in 1956 were "semi-literate or illiterate". These results however were based on a comprehension rather than a word recognition test.

Birch (1950) studied the population of 8, 10 and 11-year-old children in Burton-on-Trent using "a graded word vocabulary test". He found that in 1947 23 per cent of the children had a reading age at least 2 years below their mental age, but this survey was not confined to children with an I.Q. of 90 or over and the degree of retardation chosen was less than in our survey. Subsequent remedial measures much improved the situation.

Morris (1966), using the Watts-Vernon Reading Test (Ministry of Education, 1950) in the course of the 1957 Kent survey, found 0.7 per cent of 10½-year-olds to be "semi-literate or illiterate". Other studies, such as the Newsom Report (Central Advisory Council for Education, 1963), which have investigated secondary school children have found levels of illiteracy just as high, and it seems probable that if a child has not learned to read by age 9 his prospects of doing so, as long as he remains in the ordinary school milieu, are rather poor.

The preponderance of boys is similar to that which has been found in most other studies of retarded readers.

Vernon (1958) has reviewed a number of surveys of retarded readers such as those of Durrell (1940), Macmeeken (1939) who surveyed 392 Scottish children aged $7\frac{1}{2}$ – $10\frac{1}{2}$ years, and Schonell (1952). In all these a male : female (M : F) ratio of about 2 : 1 was found. The Ministry of Education report (1950) and the Middlesborough report (1953) also show a very similar M : F ratio.

The recent survey of 11,000 7-year-olds by Kellmer Pringle *et al.* (1966) shows that 11.2 per cent of boys were still on reading book 1, as opposed to 5.9 per cent girls. But Morris (1966), reporting on the Kent survey, found no significant sex differences in reading attainments in 1957 and 1956, though there was such a difference, with the girls better readers, in 1955 (at age about 9). The figures quoted by Morris, however, were means for the whole population, and there is evidence in

her data of a small group of very retarded readers in which boys out-numbered girls. Thus in 10½-year-olds in 1957 0.8 per cent of the boys but only 0.5 per cent of the girls were in the "semi-literate or illiterate" category.

These M : F ratios are very much smaller than those found in most reports of cases referred to clinics. Examples from clinic populations are ratios of 4 : 1 reported by Park (1948) and also by Hallgren (1950), 9 : 1 in the 41 cases reported by Young (1938) and over 20 : 1 reported by Shaw (1966) from the language clinic at the Hawthorn Centre, Northville, Michigan.

The sex ratio we found in this study thus coincides with that found in other comparable surveys and differs from that found in clinic cases, giving confirmatory evidence of the completeness of the survey.

SUMMARY

The population of 9-year-olds in the ordinary schools in Dundee was surveyed and the incidence of severely retarded readers determined among those with an I.Q. of 90 or over on the Terman-Merrill scale. There were nineteen such children with a reading age of 6½ or less. This represents an incidence of about 1 per cent of the population studied. The attendance records of the non-readers were significantly worse than those of a control group but poor attendance nevertheless appeared to be an important factor in only a minority of cases. In the group as a whole there were no social class differences compared with controls of normal reading ability from the same school classes.

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REFUSAL OF AN ADOLESCENT TO ACCEPT THE MODERN WORLD

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INTRODUCTION

MICHEL S., a 16-yr-old French boy, was referred to me in Paris in 1964 by a psychoanalyst colleague for possible insulin coma treatment. The symptoms were indicative of obsessional psychoneurosis but my colleague wondered if it were not the beginning of schizophrenia and, in any case, a pharmacological treatment seemed to her to be necessary.

Michel appeared a tall, intelligent boy. It was obvious from the beginning that there were no symptoms of intellectual impairment. His difficulties stemmed from the attitude he has adopted, an attitude which is the very heart of what must now be considered a sickness—he obstinately refuses to accept all aspects of the modern world.

His I.Q. on the Terman-Merrill was 122 and he was a bright student in French. He was diffident towards scientific disciplines for reasons which will be presented in detail later on. He finally left school when he was 17, 2 years before the "Baccalaureat" which is the culmination of French secondary school.

FAMILY HISTORY

His father, who was 53 in 1964, holds a fairly important post with the French Railways.

The mother, aged 45, is of average intelligence. When she was 17 she went through a phobic-obsessional episode; she was afraid of suddenly having the idea of hurting somebody and, especially at this time, her nephews. A similar feeling was experienced after marriage when she was living with her mother-in-law, and again after delivery, when she was taking care of her baby son. The last episode of this type occurred a year after the beginning of Michel's overt difficulties when she entered the climacteric period; once more it was directed against her, now octogenarian, mother-in-law. It must also be noted that when she was 16 she experienced a strange and tormenting perplexity concerning her own identity: she wondered why "she was herself and not another person, why she was the daughter of her parents, why she was a typist and not something else". This perplexity did not last longer than a few weeks.

Another family antecedent—this on the paternal side—has a curious relation to Michel's case. He had an eccentric great-uncle who, contrary to Michel, was ultra-modern and wanted to introduce power-viniculture at a period when few French grape-growers knew anything about it. Rejected and disparaged by his family, he had an unhappy life and died "melancholic".

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PERSONAL HISTORY

Michel was a wanted child, he was easy to bring up, though somewhat possessive and probably, even when small, had an authentic originality. He spent all his childhood with his parents and with his paternal grandmother who never left her son, daughter-in-law, and grandson. From the age of 5 Michel used to spend approximately 4 months in the year with his grandmother in an old country house in the county of Aude (South of France), thus being separated from his parents for 3 months (as his father had only 1 month of holidays a year). At the age of 6 he already had a genuine passion for oil-lamps, at 10 he was inconsolable over the loss of a pair of reins. He has never been too affectionate with his father, but was a respectful son, though growing obstinate as he became older. He was more demanding towards his mother, especially when as a small child he used to cry when she left him for a couple of hours, and was very much afraid of losing her when she went shopping. Nevertheless, he adjusted to longer separations during holidays (as mentioned he used to go South with his paternal grandmother while his mother stayed in Paris). Only during the acute stage of his difficulties was he brutal with his mother (for instance when he discovered that she had introduced some kind of new electric device into the house). But on the whole he is an affectionate son to his mother.

He was brought up as a Catholic but did not always agree, even as a child, with what the curate said. For instance he was deeply shocked at the age of 9 when he heard the curate say that men were descended from monkeys.

Nevertheless his life apparently proceeded normally until he was 13 when he had a viral hepatitis; but this was accompanied neither by loss of consciousness nor by convulsions. He also told me, during one of the sessions, that till he was 13 he was capable of being interested in girls. From that time on he systematically suppressed such desires, or, at least, never tried to establish a contact with a girl.

It was shortly after this hepatitis that Michel began his evocatory gestures. He would go to a window and kneel on one knee. From this period he did all he could to ignore anything that was manifestly modern, notably plastic objects and electricity.

CLINICAL FEATURES

Michel is tall and thin, his face lengthy, the features irregular and mobile. He rather recalls some of El Greco's models. Not only is contact easily made with him; he is voluble and emphatic. When one of his forbidden subjects is introduced (I will try, later, to systematize them), he becomes animated and delivers a veritable philippic.

Rather than to relate the main features of our many talks, I will try to explain Michel's chief preoccupations.

1. *The technical perfections of the modern world*

Here his tolerance is restricted to the steam-engine. He accepts this "because its mechanism is simply enough to be explained to a peasant, who will understand that as steam can lift the lid of a kettle, so, properly controlled, it will operate a piston". All the rest is agonizing to him.

From the beginning of his illness Michel has refused to wash his hands in a plastic bowl. Electricity anguishes him because it is a force that men have put to their use

without understanding its nature. His hostility to electricity has even incited him to steal small gas-meters which he has installed in his home. Installation of a washing-machine in a cellar of his parents' house sent him into a rage.

2. *Hatred and rejection of modern science*

Underlying this attitude to modern life is the profound anguish stirred in him by the higher developments of science. His three main objects of anxiety and revolt are the atom-bombs (which he avoids naming, using paraphrases instead); aeroplanes and "all that" (the "all that" obviously referring to missiles, space machines and so on); and, lastly, television which he detests so much that he quarrelled with his maternal grandfather who bought a set.

3. *The modern trends of the Roman Catholic Church*

To say that he disapproves of the loosening of the Church's attitude to liberalism and to the non-Catholic world would be an understatement. The recent steps towards a reconciliation with the Protestant world roused him to acute indignation. He is also violently opposed to the "Mission de France" (a French Catholic Church movement aimed at creating a link with the working classes, especially by sending priests—called "prêtres-ouvriers"—to work in factories and mines). He regrets the institution of a Council and at times he seems to doubt the infallibility of the Pope.

4. *The non-European world*

Everything outside Europe, and perhaps everything outside France, rouses only distrust and protests from Michel. He detests the Chinese, but without being able to say why. African negroes enrage him; he credits them with malefic powers because of the strength of their rhythms and of their art. America he hardly likes at all, he resents acutely its contributions to technical progress. Anything exterior, exotic, or foreign, risks infringing on the quietude of the refuge he seeks.

His attitude may be relatively ambivalent—on the one hand he says he feels more attached to things than to human beings; on the other hand he seems distressed when speaking of the poverty of underdeveloped countries and says, "the right thing would be to deprive ourselves and give everything to them". Here, although troubled by the discrepancies in the welfare of peoples, he shows the same wish to avoid being "caught-up".

5. *Pop singers*

He abominates them, both for the tenor of their "message" and for the audiences they attract, a point to be later examined.

6. *Abstract art*

He makes detours to avoid facing certain abstract paintings in my reception-room, because they upset him. He is ill at ease even if he turns his back on them. He must be seated so that the detestable paintings are outside his line of vision. A similar anathema applies, as we have seen, to primitive art. A painting must be as realistic and reassuring as possible; otherwise it is maleficent.

7. *Sexuality*

As we have indicated, sexuality in Michel, in so far as it concerns the choice of a partner, has ceased to exist or, rather, has been repressed from 13 on. The impulse, nevertheless, remains just as acute. He masturbates daily and has fantasies, sometimes heterosexual, sometimes homosexual (he calls it "to play sex" but it does not seem that he means a real penetration). He does not envisage having sexual relations; he feels that if he had them he would lose control and this is what frightens him the most.

DEFENCE MECHANISMS

To struggle against a world which he considers to be both mad and maddening, Michel employs a number of methods. The simplest is evidently denial. Thus he decrees that lasers "do not exist". In the same way he wishes to ignore Africa and America.

These attitudes result in his partial refusal to accept much of the modern world, or practically all the daily life we lead. When he was attending college, his English teacher had the unfortunate (for Michel) idea of suggesting for construing a passage from George Orwell's *1984*. Michel thereupon refused to attend the English classes. In the same way he refused to attend the physics and chemistry classes, after the teacher had introduced the structure of the atom for study. When Michel's grandfather bought a wireless set, he broke off relations with him. His parents consistently give way to him, but there are occasions (in which they are not concerned) when retreat is impossible. For example, and most unfortunately for Michel, Europe's biggest thermal works were recently built near his home. Michel reacted with extraordinary violence and several times a day had to resort to magical rites. Thus, he leaves the house, contemplates the tallest of the chimney-shafts, returns to his room, washes his face and particularly his eyes several times, and changes his clothes.

One of his most effective ways of combating his anguish is to take refuge in the past, as in his affection for oil lamps (he resented General de Gaulle referring ironically to them in a speech). He often goes to the Madeleine Church in Paris to see the "suisses" (church officers in full regalia). He feels really at ease only when he is in the country, among peasants, though only if they do not use machinery in their work. He dreams of becoming an agricultural labourer and tilling the soil in the most primitive fashion. He retains, however, a certain sense of reality and is more or less prepared to study for the legal profession.

PHENOMENOLOGICAL ASPECTS

On making a closer examination of Michel's attitudes, one is struck by their rigour and coherence. He feels with extraordinary acuteness the danger of rein being given to certain techniques. He says: "The modern world is walking on its head; I don't want to go mad". He feels that accepting the world as it is today, we also accept it as it will probably be tomorrow. Discovery of the atom signifies the end of what has been concrete and continuous; if, therefore, we do not advance, the world will explode. There is also no reason why the efforts to attain greater and greater speeds should cease; the technical acceleration can lead only to catastrophe. Michel becomes literally dizzy in the fourth dimension of time; he would like to have both the wisdom of the old and the hopes in life that are felt by the young.

He has the same anguish concerning space, but in a very special way. The sight, or even the idea, of a huge modern building terrorizes him, because he imagines a monstrous edifice stretching uninterruptedly from Paris to Marseilles and even to Vladivostok. Here is an apparent opposition to his terror concerning the discontinuity of matter. Actually, it is not at all so. Inasmuch as such building is continuous on such a scale, it becomes itself an element; it ceases to be on a human scale. The idea of television upsets Michel just as much because he imagines a million people following the same programme and laughing at it together. The vision grips and terrifies him. It explains his hatred of television and radio stars, the inspirers of accursed communion.

Michel, however, is not resigned to all this. He considers he has a duty to perform; he must help to save the world. His hoped-for task will be long; the decontamination will, he estimates, take 50 years. He will not be sectarian. He will tolerate some of the least harmful acquisitions, such as electric light. How will he accomplish his great task, he does not know; he feels simply that he has a mission to perform. A dream he recounted to us throws a vivid light on his *Weltanschauung*. He sees the Pope in his majesty, then he himself as the Pope, standing on a cross whose intersecting and luminous lines stretch to infinity. The cross begins to turn, the rotation accelerates, attains vertiginous speed . . . Then it breaks into innumerable pieces and everything gradually disperses in smoke.

It must be added that Michel has an acute awareness of the doctor-patient relationship. After the consultation with Prof. J. Delay, he said to me: "You have become less inaccessible. Till we saw Prof. Delay you were on the other side. You were distant." Meaning by this that when I saw him, we were on opposite sides of my desk, while, during the consultation with Prof. Delay, he (Michel) and I were on the same side.

I have no further aetiological factors to add. The physical examination revealed nothing abnormal. During the 2 years I have followed him his intelligence has not deteriorated. An E.E.G. has been out of the question because of his terror of technical things and, especially, of electricity. He would think himself contaminated (though in a manner which cannot be considered as delirious) simply by contact with the electrodes. He also refused to take personality tests.

NOSOLOGICAL ASPECTS

1. *Obsessional psychoneurosis*

This is, in principle, the most satisfactory diagnosis. It can be argued, however, that this boy is not meticulous; that he does not give the impression—curious though that this may seem to those who do not know him—of being psychologically rigid. On the contrary he is all fire and flame. He has the fervour of a Savonarola (a recent study by Lewis [1965] contrasts two types of obsessional personality, that of Amiel and that of Luther. Our subject is definitely a Luther type).

Sufferers from psychoneurosis usually maintain a certain aloofness towards their symptoms, whose absurdity, in their heart of hearts they recognize. Not so Michel. His convictions seem to him to be unassailable; they are a part of his personality. They have none of the parasitic, almost mechanical quality of ordinary obsessions. Finally the manifestations of young people (with Michel, the phenomena first

appeared when he was 13) are always suspected to be the first step towards a "Spaltung" of a schizophrenic type.

2. *Schizophrenia*

We undoubtedly see in Michel a whole series of existential attitudes described by Rogues de Fursac and Minkowski (1923) in their study of morbid rationalism. It is true that Michel does not seek to adapt himself to realities. It is equally true that most of the manifestations, or, rather, the attitudes that I have described, appear to be secondary phenomena linked, as stated by the above-named authors, with an effort of regrouping, in the search for a new equilibrium. Rogues de Fursac and Minkowski also emphasize what they call the antithetic attitude which makes a hard and fast distinction between right and wrong. In Michel's case the delimitation is as pronounced as possible. He is like the subject described by the above-mentioned authors as a die-hard doctrinaire. He is perfectly egocentric, and this probably explains the paranoic side of his attitude: "We describe as egocentric activity, or active egocentricity, the tendency to apply all activity to one's own personality". (Rogues de Fursac and Minkowski, 1923.) It is equally true to say that just like their patient, Michel reacts not only under the influence of a "restricted circle" (i.e. his own social group), but under that of the "whole world"; he feels concerned with what is going on a world-wide scale.

In the same way, considerations relating to the idea of "rest" or of "relaxation" apply to Michel in so far as that idea applies to the notion of time and rhythm.

Must Michel therefore be considered as affected by a borderline variety of schizophrenia, mainly characterized by autism? Lack of irrefutable evidence makes this difficult to answer, but it is impossible, at any rate in the framework of doctor-patient relations, to call him autistic. Even towards his parents and teachers he does not display a detachment; he is emphatic, doctrinaire, passionate, and not detached or indifferent.

One cannot, it seems to me, speak of schizophrenia when there is no evidence of dissociation. Michel's thoughts run without interruption; he lives according to a logic that is peculiarly his own, but which is consistent. Some of his attitudes, notably his conceptions of time, acceleration and space suggest a psychosis. Actually that is what one observes nosologically, in phobic neuroses which appear to be really miniature paroxysmal psychoses. We will see, further on, that this problem partly determines the choice of the treatment without, however, defining it very clearly.

3. *Juvenile originality*

Lastly, we can ask if this is not a case of what is usually called in French nosography "a crisis of juvenile originality". The crises of "juvenile originality" which we usually see around us are remarkable for their lack of originality. The adolescents focus their admiration on a certain ideal personality, let us say the Beatles or Elvis Presley. There is nothing of this kind about Michel. His horror of the modern world is borrowed from no one; it revealed itself to him at a particular point in his existence.

We can take the discussion further and pose the problem raised by certain authors, notably Laing (1964) in England and Bastide (1965) in France. Laing says that schizophrenia does not exist (we would be wary of accepting such an extreme thesis);

that one is always the "schizophrenic of someone"; that the fact of making this diagnosis is a social, and even a political, fact. For Laing, the schizophrenic is one who lives in the interior, as opposed to the exterior, world. He writes of the "trip", a term recently employed to describe experiments made with L.S.D. 25. He recommends non-interference with schizophrenics; that they should be left to pursue their plunge into the interior world, a plunge which after all is only a natural process towards improvement. He recommends the replacement of what he calls the ceremonial degradation of the psychiatric examination by help, on the "trip", from those who have themselves made it and have returned, in short, from former sufferers.

A rather similar idea is maintained by Bastide (1965): ". . . but what we can affirm is that schizophrenia at least gives us an authentic sociological category. It admirably defines human beings in a niche, and those phenomena which we have just compared with the action of a shell-fish against the aggressiveness of an antagonistic system—a rigid shell-fish inside which further useful systems can exist, but in a state of suspended animation or, so to speak, in a protoplasmic condition" (p. 253). And, further on: "We thus see that the mad are mad only in relation to a given society" (p. 254).

Without wholly adopting these opinions, which to the practising psychiatrist can seem rather paradoxical, we may wonder to what extent Michel's feelings of anguish and revolt are not a healthier reaction than the unawareness shown by people who today are out-distanced by the unloosing of techniques they themselves have created.

There is still one problem—that of heredity. It must be noted that Michel's mother suffered from a phobic-compulsive condition, first at 17, then as a young woman and, finally, during the climacteric. Here again the problem presents difficulties. Some argue that it could be explained by genetic transmission; others are confident that Michel's condition was determined by the personality structure of the mother. It may be remembered, too, that Michel's paternal great-uncle offers a certain similarity, but, in this case, only a hypothetical genetic transmission might be thought of (Michel has never heard about this great-uncle until recently, i.e. after the onset of his own difficulties).

PRACTICAL CONSIDERATIONS

Laing (1904), faithful to himself, has founded a villa near London where "supposed schizophrenics" are given the time to go on their "trip" without attempts being made to influence its direction. This sort of attitude is not usually taken in France. We have seen that the colleague who preceded me in the case of Michel did not envisage psycho-analysis. I have, for my part, tried to combine a face-to-face and non-interpretative psychotherapy with chemotherapy, using for the latter, the only medication that produces results in cases of obsessional psychoneurosis: Imipramine. The combination of Imipramine either with Butyrophenone (Haloperidol) or with Diazepam (Valium) has given only mediocre results. At this point an escalation in the physicochemical treatment must be envisaged. I consider it without enthusiasm, believing that in the present case it is, after all, a question not of illness but of a personality, and that our most energetic measures risk breaking against the coherence of a quasi-perfect system. I would willingly have contemplated a course of E.C.T.

and may still employ this though ensuring that Michel (because of his attitude to electricity) is unaware of the nature of the treatment he is undergoing. Will it be necessary to proceed to insulin coma treatment? I consider that this would hardly be justified at present, and that a state of coma is not called for. This treatment originated when a quasi-magical power was attributed to convulsions. It seems that sub-comatose insulin has the same therapeutic properties (probably because it modifies the internal milieu and very likely the oxidizing regime of the neurons), and this at less risk. Moreover, if it "is" efficacious, there always remains the risk of the subject (not to say the "patient") reacting violently against what he would interpret as an attempt to modify his personality. Just as the sufferer from insomnia, frightened of going to sleep because he identifies sleep with death, struggles against slumber, so does our subject try to preserve this special core of personality which to him seems the only way to safety.

RESUME

Observation d'un garçon de 16 ans qui refuse de façon frénétique tout ce qui est moderne et, notamment, les avions, les missiles, les bombes nucléaires, l'orientation libérale de l'Eglise Catholique, les "Pop singers", l'art abstrait, en même temps d'ailleurs que tout ce qui est exotique. L'évocation de ces sujets tabous déclenche chez lui une angoisse et une violente irritation et il se livre à des rites de conjuration pour ne pas être contaminé. En même temps on n'observe chez lui ni détérioration intellectuelle ni "spaltung" schizophrénique. La place nosologique de cette façon d'être et la conduite pratique sont discutées.

SUMMARY

The case-history is presented of a 16-year-old boy who refuses frantically all that is modern, namely, aeroplanes, missiles, nuclear bombs, liberal trends in the Catholic Church, Pop singers, abstract art and, at the same time, everything that is exotic. Reference to these taboo-topics leads to anxiety and temper-tantrums and he uses conjuratory rites in order to avoid "contamination". He is neither deteriorated nor dissociated in a schizophrenic way. Problems of nosological classification and therapeutic attitude are discussed.

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EFFECTS OF STIMULUS NOVELTY ON MANIPULATORY EXPLORATION IN AN INFANT

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NOVELTY has been shown to be one of the most potent collative properties of stimuli in eliciting specific exploration (Berlyne, 1960, 1966). Carr and Brown (1959) showed that exploration in monkeys could be initiated and maintained at a high level by the repeated introduction of novel stimuli; Welker (1956) found significant increases in the responsiveness of chimpanzees to novel objects relative to familiar ones. The relationship between novelty and attention on the one hand, and the orienting reaction on the other, has interested workers at many different levels of investigation. Several studies have demonstrated the power of novel stimuli to dishabituate or re-alert an animal by describing their effects on the orienting reaction (e.g. Sokolov, 1960, 1963). Other studies have demonstrated the efficacy with which novel stimuli secure attention even in human infancy (Fantz, 1964; Saayman *et al.*, 1964; Kagan *et al.*, 1966).

Although active exploration has been extensively studied in infrahuman primates and other mammals, investigations of similar behaviour in human infancy have been few. Some studies, using an operant paradigm, have shown that exploratory behaviour even in very young infants can be subjected to experimental control (Rheingold, *et al.*, 1962; Friedlander, 1966). Other studies have been concerned with exploration in the visual modality (e.g. Fantz, 1963; Lewis *et al.*, 1966). Neither of these types of study therefore are amenable to a comparative analysis with many studies of primate exploration.

This preliminary study was an attempt to investigate the effects of novelty at a period in the ontogeny of human motor and perceptual development when most objects are readily and actively manipulated. The young infant from about 5 months of age appears to reach for, grasp and manipulate any reasonable-sized object in its environment. Initially all objects are novel—later they are novel to a greater or lesser degree. Berlyne (1960) has discussed the distinction between “absolute” and “relative” novelty. Relative novelty is generally studied in a sequential context. In such conditions the stimulus itself may not be novel to the subject but its particular position in an arrangement or sequence—the “violation of expectation” (Lewis *et al.*, 1966)—gives it the property of relative novelty. This term is also applied to describe that property an object has for a subject when it has not been encountered for a specific and limited period.

Absolute novelty on the other hand, applies to objects and stimuli which the

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subject has never encountered previously in its history. In order to evaluate reliably the effects of absolute novelty it is necessary either to devise an object with novel features or to know fully the subjects' past history. The former approach has been used with children of 3-5 yr of age (Hutt, 1966); the latter approach was possible in this detailed study of a 7-month-old infant.

METHOD

Procedure

The life-history of the male 7-month-old infant, who was the subject of this study, was known, and hence what objects had been encountered. All observations were made during his 7th month. Observations were made three times a week, always at mid-morning, about 15 min after the morning sleep. The child was observed in the course of his normal play while sitting in a high-chair (see Figs. 2-4). This particular position was found to be most satisfactory for reasons mentioned later. Each session lasted 30 min.

Twenty-two "toys" were used, though many of these were common and usually discarded household items (e.g. coffee jar lid, empty jelly packet, empty film reel, etc.). However, the conventional rattles, coloured beads and rings, etc., were also used. No toys produced unusual sound or visual effects. Ten of these objects were completely novel and consisted of an interlocking set of 10 small bricks, a red plastic teaspoon, a jelly packet, a teething rattle, a film reel, tin lid of a baby-food jar, blue plastic ring tied with white ribbon, tooth-brush, ball of crumpled cellophane and a yellow cylindrical stick. The interval between successive presentations of any of these objects was 2 days.

During these observation periods the child was allowed to play with one object

		OBJECT-SEQUENCE									
		1	2	3	4	5	6	7	8	9	10
SESSION	1	■	1 ₁	■	■	■	■	■	■	■	■
	2	■	■	■	1 ₂	■	■	■	■	2 ₁	■
	3	■	1 ₃	■	3 ₁	■	■	■	■	■	2 ₂
	4	■	■	3 ₂	■	1 ₄	■	4 ₁	■	2 ₃	■
	5	■	3 ₃	■	1 ₅	■	5 ₁	2 ₄	■	■	4 ₂
	6	■	■	5 ₂	■	3 ₄	■	6 ₁	2 ₅	■	4 ₃
	7	■	5 ₃	■	■	7 ₁	3 ₅	4 ₄	■	6 ₂	■
	8	■	7 ₂	■	5 ₄	■	■	8 ₁	■	4 ₅	6 ₃
	9	■	9 ₁	7 ₃	■	5 ₅	■	■	8 ₂	■	6 ₄
	10	■	■	9 ₂	7 ₄	■	■	10 ₁	6 ₅	■	8 ₃
	11	■	■	■	9 ₃	7 ₅	■	■	8 ₄	■	10 ₂
	12	■	■	■	■	9 ₄	■	■	■	■	■
	13	■	■	■	■	■	9 ₅	■	10 ₄	■	■
	14	■	■	■	■	■	■	10 ₅	■	■	■

FIG. 1. A diagram illustrating the procedure used for the presentation of the toys. The objects are arranged horizontally and successive sessions vertically. ■ = familiar toys; large numerals = ordinal position of novel objects; suffixes = no. of presentation. The procedure provided a balanced design for each half of the session, half the novel toys being presented in the first 15 min, and the other half in the second 15 min. It also allowed a regular increase and decrease in novelty and the presentation of 5 relatively novel objects in each of the 5 positions in each half session. (This procedure was slightly modified to permit the presentation of a completely novel object 3 times in position 6—see Fig. 7.)



FIG. 2. One characteristic motor pattern in exploration: half-turns of the wrist with extended arm.



FIG. 3. "Turning over" of object while held in both hands. Note half-open mouth.



FIG. 4. The "biting" expression sometimes associated with novelty exploration.

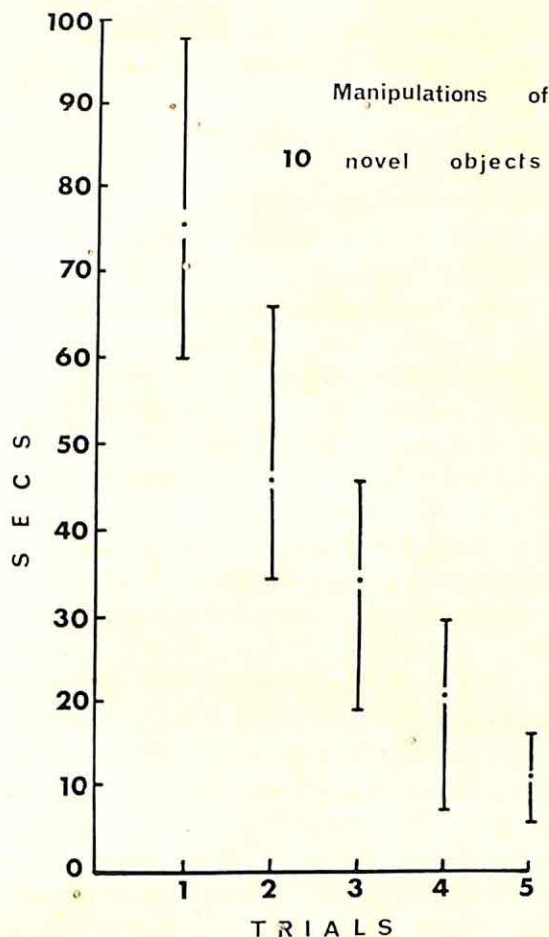


FIG. 5. The mean and range of durations of manipulations (within a 3-min period) of objects on their first and 4 subsequent presentations.

for 3 min, if during this time that object was dropped, it was handed back to him. At the end of 3 min he was given a different object, and so on for the 30 min. Timing was done by a stopwatch and recorded immediately; notes were also made of the nature of the motor activities directed towards the objects. The order of presentation of the 10 novel items in the different sessions is shown in Fig. 1. An attempt was made to vary the selection of 12 familiar toys used on subsequent sessions.

RESULTS

In general, when an object was offered it was grasped immediately, i.e. within 3 sec. It was then held in both hands for a few moments. With a novel object there was often accompanying apnoea lasting several seconds. At the beginning of the 7th month a "clutching" pattern usually with one, but sometimes with both hands, was predominant. This consisted of fairly rapidly opening and closing the fist—with malleable objects like glazed paper this produced interesting sounds, but with less malleable objects like boxes the movement was performed against the surface, which resulted in a "scratching" sound.

This would often be followed by half-turns of the wrist which resulted in different aspects of the object being viewed. Both the clutching and turning movements of the hand would then be performed with arm extended to the side—the turning movement in this position was most frequently performed with cylindrical objects (Fig. 2).

Another motor pattern which appeared in this period was the transfer of the object from hand-to-hand—a transfer would often be followed by an extension of the arm and hand holding the object, and then the transfer enacted again. A pattern which appeared later in the month was turning of the object over and over again while held in both hands (Fig. 3). These two patterns then became the predominant ones, the latter almost invariably occurring on the presentation of a new object.

All these manipulatory patterns were accompanied by visual inspection and an intent facial expression—the mouth would often be half-open, but sometimes the upper gum would bite the lower lip (see Fig. 4). As the objects became more familiar, however, the expression of concentration would disappear, the child might hit the object with open palm or bang it repeatedly on a surface, and visual fixation would not necessarily be upon the object. This sequence of behavioural characteristics with increasing familiarity of objects is essentially the same as that found in older children (Hutt, 1966).

By far the most striking data, however, are the quantitative effects of novelty upon duration of manipulatory exploration. Figure 5 shows the mean duration of manipulation as well as the range, for 10 novel objects on their 1st, 2nd, 3rd, 4th and 5th presentations (trials). The interval between 2 successive trials was 2 days and each trial lasted 3 min. The mean duration of manipulatory spans decreased markedly with successive presentations. A span was terminated when the hands ceased to be in contact with the object. The range of manipulatory durations was

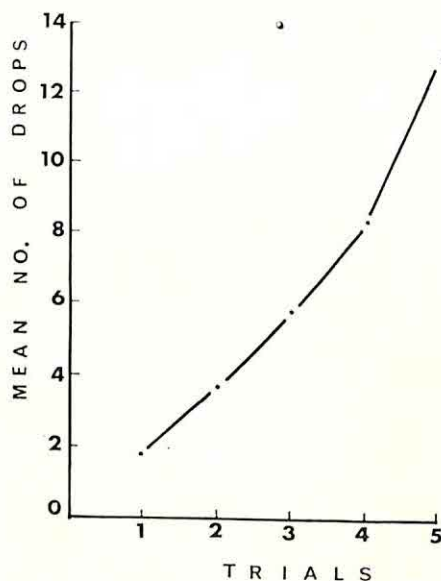


FIG. 6. The mean number of drops for 10 novel objects upon their first and 4 succeeding presentations. Duration of each trial = 3 min.

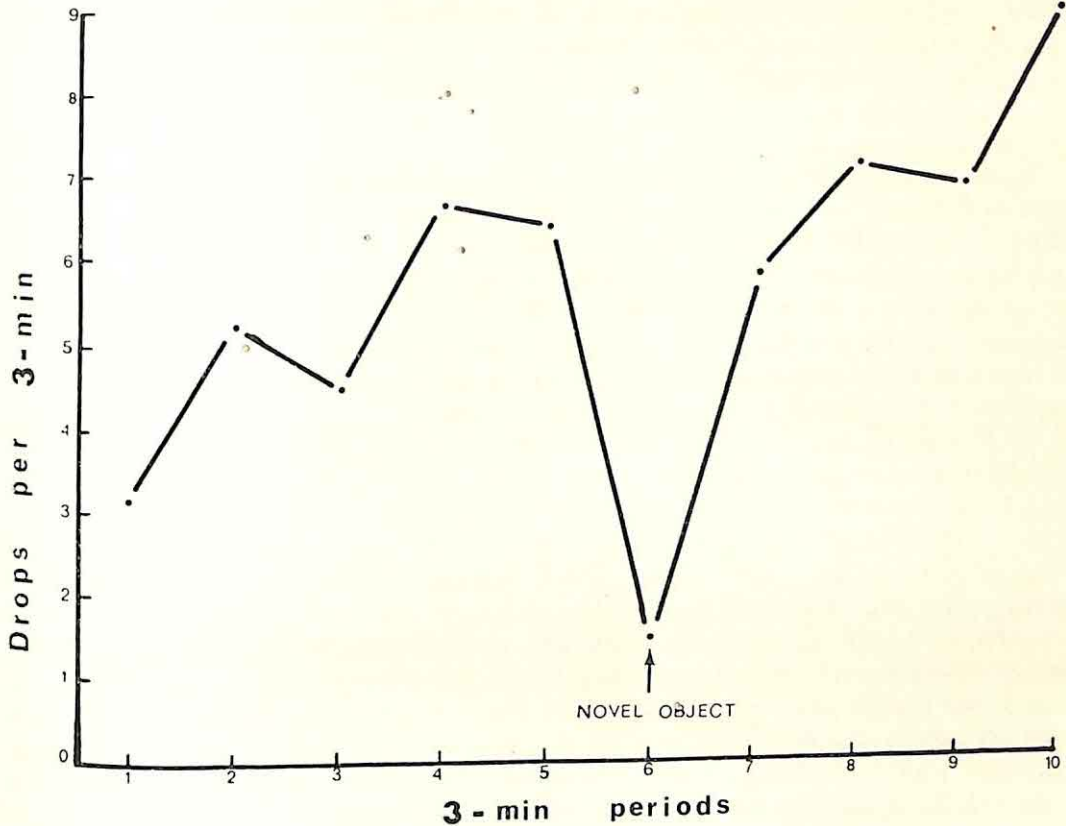


FIG. 7. The mean number of drops per 3-min period in 3 continuous 30-min sessions, when a *different*, but relatively familiar object was presented every 3 mins. A completely novel object was presented as the 6th object. This graph was derived from sessions 6, 8 and 10 of Fig. 1.

relatively great when the objects were novel since in part these were dependent on the nature of the object. On subsequent trials, however, the range was progressively narrowed. In other words, as the object became familiar it was readily and predictably dropped within a few seconds, as shown in Fig. 6.

The child was observed while sitting in a high chair since this made it easier to distinguish "drops" from "slips". Slips were momentary losses of the object during which the child strived to retrieve it from its lap or the crevice of the chair. On the other hand drops were characterized by a loss of attention—there would be no attempt to follow the object visually and often the hand that had released the object would rest limply over the side of the chair. In this situation, therefore, "drops" seemed to punctuate the end of attention spans.

Over the 30-min session the child would become tired, and in general manipulatory spans showed a tendency to become shorter as the session progressed. If, however, a completely novel object was introduced, this produced a pronounced increase in the duration of manipulations and consequently a reduction in the number of drops (Fig. 7). Every 3 min a different but fairly familiar object was presented; a com-

pletely novel object was presented as the 6th one and the frequency of drops, which otherwise would have continued to increase, showed a dramatic decline. Figure 7 is the average curve computed from three such sessions.

DISCUSSION

It is a commonplace observation of harassed caretakers that babies drop toys as often as they are handed to them. Between the ages of 9 and 12 months a baby's "drops" are notable for their nuisance value, though, as Piaget (1953) has shown, such behaviour may in fact be an attempt to effect some instrumental change upon the environment, e.g. a tertiary circular reaction. Prior to this stage, this much-maligned activity can clearly be a sensitive and quantitative behavioural index of attention as much as any laboriously measured autonomic response, rather than the converse as Kagan and Lewis (1965) seem to suggest.

In this preliminary study of exploration in infants, which is part of a larger investigation of exploratory behaviour in young children, such "drops" have been used to demonstrate the potent effects of novelty. Although much work has been done on the effects of stimulus complexity on visual exploration in neonates and older infants (Berlyne, 1958; Fantz, 1963; Spears, 1963) interest in the effects of novelty have been relatively recent. The property of objects we call "novel" presupposes a conceptual store of information, of "neuronal models" (Sokolov, 1958) against which the new object may be matched. The young infant has no such store, or so it has traditionally been thought. But some important studies have shown that even neonates are capable of perceptual discrimination of a fairly subtle kind between "familiar", habituated stimuli and new stimuli (Bronstein, *et al.*, 1958; Engen and Lipsitt, 1965; Engen, Lipsitt and Kaye, 1963). In these studies, however, very small inter-trial intervals were used—usually of the order of minutes. Keen, *et al.* (1965) have found acoustic habituation of the neonatal heart rate response to be retained over 24 hr. The present study demonstrates somewhat similar effects in a more cognitive area, with retention over several days.

Schaffer (1967) makes the interesting point that sometime between 5 and 8 months of age human infants acquire the ability to *register* the fact of novelty, but not to *act* upon it since they reach for familiar and novel objects equally readily. The present case suggests that the critical period of which this is true may be around 6 months. Complete novelty was also seen to have more potent effects than relative or short-term novelty, as only the totally new objects were able to appreciably counteract the effects of physical fatigue. Moreover, this greater attention to novelty had no proactive effect on subsequent manipulations (Fig. 7). This degree of specificity in attentive response mechanisms suggests a neural apparatus capable of relatively long-term storage even in later infancy. Since the results obtained here are remarkably similar to those of infra-human primates, it will be of some evolutionary interest to compare the development of motor patterns engaged in active exploration in different primate species.

SUMMARY

The manipulatory exploration of a 7-month-old male infant was systematically studied over a period of 4 weeks. Since his life history was completely known, the

effects of complete and relative novelty could be separately assessed. Irrespective of the nature of the object, the longest attention span occurred when it was most novel, decreasing with successive presentations of the object. A simple behavioural measure, viz. the number of times the object was dropped, was shown to be a sensitive indicator of decreased attention or stimulus satiation. The effects of novelty upon manipulation in human infancy are similar to those demonstrated in other primates, including the characteristic motor patterns involved.

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CONTROL OF EYE CONTACT IN AN AUTISTIC CHILD

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INTRODUCTION

IN THEIR investigation of the phenomenology of autism, Wolff and Chess (1964) found abnormal eye contact in every case and concluded that "it was difficult to define behaviour indicative of autism except for abnormalities of eye-to-eye contact from which a clinical impression of emotional withdrawal appears to be derived". Norman (1955) also emphasized that the impression of being in touch with another person is conveyed by the other person's looking into one's face so that gaze meets gaze. Wolff and Chess (1964) differentiated two forms of abnormal eye behaviour: (a) visual avoidance and (b) unusual staring. Visual avoidance was associated with the more severe cases of autism.

The autistic child's "anxiously obsessive desire for the preservation of sameness" (Kanner, 1965) has presented an obstacle to modifying his behaviour through traditional therapeutic methods (Rimland, 1964). Operant conditioning, however, has been used to reduce the stereotypy of the autistic child and expand his repertoire of behaviour toward the physical and social environment (Ferster and DeMeyer, 1962; Hington, Sanders, and DeMeyer, 1965; Lovaas *et al.*, 1964; and Wetzell *et al.*, 1966). The primary purpose of the present study was to determine if the visual avoidance of an autistic child could be overcome with operant conditioning techniques.

SUBJECT

Tom was a 5½-yr-old Negro who had no primary motor or sensory handicaps, but showed many features of the psychotic child with underdeveloped abilities. After a week's in-patient evaluation in the Diagnostic Clinic of Murdoch Center by a team consisting of a pediatrician, child psychiatrist, psychologist, social worker and nurse, the director (child psychiatrist) concluded that Tom's "reaction falls fairly clearly into the general category of Infantile Autism". In addition, Rimland's (1964) diagnostic check list was used to differentiate infantile autism from childhood schizophrenia. Fifty-eight per cent of the autism items and 18 per cent of the schizophrenic ones applied to Tom. Tom's behaviour was atavistic and asocial. He ate with his fingers, played with his feces and had no self-care behaviour. He not only avoided eye contact but also resisted physical contact and control, dropping to the floor when one tried to lead him. Destructive with plastic human figures, he pulled off their appendages and chewed on their heads. Unusual abilities, such as skilful manipulation of toys, humming of complex tunes, and reading city names on licence tags and advertising phrases appearing on television, suggested potential for a higher level of behaviour. His frequent vocalizations were "expressive jargon", except for a

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few clearly articulated words and phrases emitted out of context without apparent communicative intent.

METHOD

During the research period Tom resided in the medical infirmary of Murdoch Center, a state institution for the mentally retarded. The infirmary was not a very therapeutic milieu, being crowded with infirm and malfunctioning retardates of varied ages. Due to shortage of nursing staff and Tom's danger to other patients (e.g. by pulling off their bandages or tubes), he was frequently restrained with cloth straps.

The research was conducted in a private office in the basement of the infirmary for a 45 min session each weekday at approximately 10 a.m. During each of 33 sessions, *E* sat in a chair beside a desk at one side of the room, allowing Tom to play in front of him in a 10 × 10 ft area equipped with a cabinet filled with numerous toys. In a drawer of the desk was a silent button switch which *E* held down as long as Tom was making eye contact. The switch was wired to a Gerbrands cumulative recorder (in another room) which stepped one response for every 0.5 sec of eye contact and to counters which totalled the number and duration of eye contacts.

PROCEDURE AND RESULTS

Operant level

During four baseline sessions *E* assumed a silent, impassive role, controlling for a possible "attention" effect by observing Tom continuously. Figure 1 shows a graph of the number of eye contacts during each sessions (mean = 11 eye contacts per session).

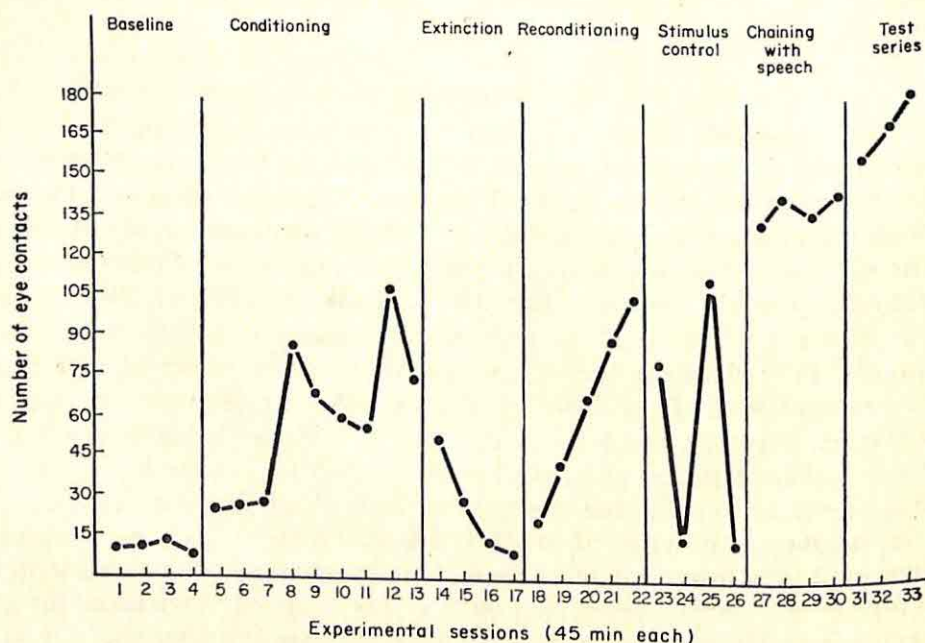


FIG. 1. Number of eye contacts as a function of environmental manipulations.

Stable low rates of eye contact occurred and the mean duration of a single eye contact was 0.7 sec. Cumulative eye contact for the last baseline session is shown in Fig. 2 (a photograph of the original record).

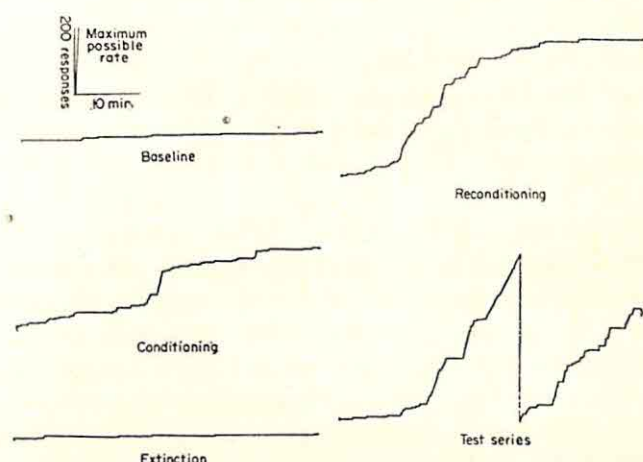


FIG. 2. Cumulative eye contact curves during the last 45-min session under five experimental conditions: baseline, conditioning, extinction, reconditioning and test series. Each 0.5 sec of eye contact produced one vertical step of the pen.

Initial conditioning

In sessions 5 through 13 *E* reinforced every eye contact by warmly saying, "That's good", or "Very nice", immediately after the onset of eye contact and by smiling for the remaining duration of eye contact. To determine the ease of conditioning eye contact, *E* planned to start with presumed ineffective or weak reinforcers and proceed toward stronger ones as necessary. Tom's avoidance of contact with his parents and other persons suggested that social reinforcers would be ineffective for him. However, to *E*'s surprise, they were strong enough to condition eye contact. Figure 1 shows the increase in number of eye contacts during the reinforcement sessions. During the last conditioning session (Fig. 2), 75 eye contacts occurred for a total duration of 2.14 min. The number of eye contacts increased approximately sevenfold while the duration of a single eye contact merely doubled. Because praise and smiling occurred at the onset of a response and praise was not contingent on duration, the greater effect on number of responses is understandable. The smaller increase in duration probably resulted from the few seconds it took to deliver praise, and from the smiling which continued during eye contact, but no doubt lost some of its lustre after a few seconds.

Extinction

To show that eye contacts were controlled by the reinforcing stimuli and not by extraneous variables, the reinforcement was delivered on a non-contingent basis. During sessions 14-17, *E* gave reinforcement (praise and smile) 60 times per session, i.e. as frequently as reinforcements were given on the average during the conditioning sessions. Reinforcements were dispensed on a variable-interval schedule with an

average interval of 45 sec and a range from 6 to 84 sec. As Fig. 1 shows, number of eye contacts progressively declined. On the fourth and last session of non-contingent reinforcement, the rate (Fig. 2) was approximately the same as during the baseline period. Only 12 eye contacts were made for a total duration of 9.6 sec.

Reconditioning

Conditions were the same during sessions 18–22 as they were during initial conditioning. Figure 1 shows the smooth recovery of eye contact which was achieved in five sessions of conditioning. Figure 2 presents the cumulative curve for the last reconditioning session.

Stimulus control

Observations made during reconditioning sessions suggested that certain toys had become discriminative stimuli (SPs) for eye contact and other toys had become SAs. The majority of eye contacts appeared to be made while Tom played with musical toys (specifically a musical jack-in-the-box, a humming top and a drum). Play with these objects had occurred most frequently during the conditioning periods and had apparently become the occasions on which eye contact was followed by reinforcement. Play with marbles (called "footballs"), and with a baseball and bat, had occurred frequently during extinction sessions and had become the occasions upon which eye contact would not be followed by reinforcement. These five toys were practically the only ones Tom played with by this time, as he was showing the stereotypy typical of the autistic child.

Sessions 23–26 were designed to demonstrate the strong stimulus control over Tom's eye contacts. During sessions 23 and 25 the SPs (musical toys) were present, but the SAs (marbles and baseball equipment) were removed from the room. During sessions 24 and 26 the conditions were reversed: SAs were present and SPs were absent. Reinforcement of eye contact continued. The pronounced alternations in number of eye contacts (Fig. 1) under these two conditions demonstrated the marked stimulus control. When SAs were present, eye contact rates were as low as baseline rates; when SPs were present, rates were as high as during the last conditioning sessions.

Chaining eye contact with speech

The narrowness of the range of stimuli controlling eye contact was undesirable for at least two reasons. First, observing or play responses to the musical toys (SPs) were not emitted at a high rate, thus limiting the occasions for eye contact. Secondly, the SPs were uncommon objects, i.e. ones which are not found in most social situations where eye contact is appropriate. Hence, the generalization of eye contact responses was likely to be restricted. It seemed more therapeutic to have eye contacts controlled by stimuli which would be available in many diverse physical surroundings and which would be frequently attended to. Tom's own vocal responses seemed to meet these requirements.

Tom vocalized continually and a number of his utterances were recognizable words. If recognizable words could be established as SPs for eye contact, the effect would be socially natural, since normal children usually make eye contact while speaking. It might also allow reinforcement to strengthen both eye and speech responses

simultaneously. Since Tom did not utter as many recognizable words as was needed to carry out this plan, a research assistant was assigned the task of reinforcing intelligible words (with social and consumable reinforcers) for 1 hr a day in another building.

During sessions 27-30 *E* attempted to chain eye contact to speech. The research assistant discovered that repetition of Tom's speech was quite reinforcing; therefore, when eye contact followed intelligible speech, *E* not only smiled and praised Tom but also repeated the word or phrases which he had just said. *E* would not repeat a word until eye contact was made. Eye contacts not preceded by speech were reinforced in the usual manner.

As shown in Fig. 1, the number of eye contacts during the chaining-with-speech sessions rose to a new high. This increase may be attributed to the increase in *SP*s for eye contact (since Tom's words were also becoming *SP*s) and/or the strengthening of reinforcement by word repetition.

Test series

The purpose of the test series was to show how much stimulus control Tom's speech had acquired over his eye contacts. During sessions 27-30 eye contacts controlled by the musical toys were not differentiated from those controlled by speech. During the test sessions 31-33, the musical toys were removed from the room but the *S*^As (marbles, baseball, and bat) remained. The physical conditions were, therefore, similar to those in sessions 24 and 26 (see Fig. 1) when low baseline rates were obtained. Reinforcement continued to be given for all eye contacts.

In the test series the highest number of eye contacts were obtained (Fig. 1). Figure 2 shows the high rate of eye contact during the last test session. Because all eye contacts were recorded, regardless of whether or not they followed recognizable speech, a tape recording was made of the last session in order to differentiate eye contacts following speech from other eye contacts. The recording indicated that 129 out of 180 eye contacts (72 per cent) were immediately preceded by words spoken by Tom which *E* repeated. This provides further evidence of the stimulus control Tom's speech had acquired over his eye contact responses. The 51 eye contacts which apparently were not controlled by Tom's speech or the musical toys, because they were absent, suggest that some desirable generalization of eye contact was occurring.

OTHER BEHAVIOURAL CHANGES

Behaviour notes were written by *E* during the sessions and supplemented from memory immediately afterward. Because their objectivity and reliability were not demonstrated, they are reported merely as clinical evidence requiring further investigation. In the baseline sessions, Tom made many attempts to leave the play area. He stood with his back to *E* much of the time; several times, however, he made momentary physical contact by backing into *E*.

When reinforcement of eye contacts began, Tom became excited, laughed and clapped his hands. He backed into *E*'s lap almost immediately, but the physical contact seemed to evoke aggression. He bit *E*'s shirt, pulled his tie and rubbed his feet on *E*. Once, after eye contact, he tilted *E*'s head upward, preventing *E* from

gazing into his eyes. Aggression toward *E* subsided; but, after climbing on *E*'s lap, Tom would then run around the room, screaming and sometimes flinging himself on the floor. In session 9, Tom made his first prolonged eye contact. With his eyes riveted to *E*'s, Tom approached until his face was almost touching *E*'s and stared for about 30 sec. In session 10, he explored *E*'s face manually, sticking his finger into *E*'s nose and mouth. He also gave *E* an affectionate hug and tried to take his belongings, e.g. pen and watch. In the next session he offered *E* some toys. In session 13, he spontaneously gave *E* a kiss on the forehead, and explored *E*'s eyes with his fingers. He solicited *E*'s help in turning the crank of the music box.

When extinction began Tom prolonged his gaze at *E*, watching expectantly; finally he asked, "That's good?". When no reinforcement followed, he twisted *E*'s nose. Then he offered *E* toys. This offering was followed by his trying to eat clay. Non-contingent reinforcements did not seem to reassure him. After several non-reinforced eye contacts, Tom began screaming and throwing the football. He repeated, "That good", to himself. Finally he flung himself at *E* in head-on assault, rubbed his feet on *E* and tried to chew his tie. In the next extinction session, less aggression occurred. In the third and fourth extinction sessions, there was long, isolated, but apparently happy play with marbles.

In response to the first reinforcement during reconditioning, Tom frowned. However, he crawled directly into *E*'s lap and played with his pen. Approach behaviour, without aggression or emotional upset, followed many eye contacts. At the end of the first reconditioning session, Tom resisted leaving. In session 22, Tom explored *E*'s face and kissed him on the cheek. During the remaining sessions there was much physical contact and continued displays of affection.

DISCUSSION

The results indicate that eye contact responses in an autistic child were controlled by both reinforcing and discriminative stimuli. No claim is made as to the generality of the findings to other children or to situations beyond the experimental one. A problem characteristic of autistic children—a narrow generalization gradient (Rimland, 1964)—arose even within the experimental situation. The problem was dealt with by chaining the desired response (eye contact) to another socially desirable but more frequent and generalized response (speech). This method may have potential for developing other behaviours which are difficult to generalize. It also has the advantage of efficiency in that two desirable responses can be simultaneously increased.

It is not suggested that the present method of establishing eye contact is similar to conditions which determine the normal child's eye contact. However, there are suggestions that development of eye contact by operant conditioning techniques may have considerable therapeutic value. First, increased eye contact in the autistic child creates a sense of relationship and affects the reactions of others to him. Secondly, changes in other behaviour suggest that positive side effects may accompany conditioning of eye contact responses. The effects, of course, need to be more objectively recorded before definite conclusions can be drawn. The experimenter was nevertheless impressed with the increase in approach, exploratory and affective behaviour which accompanied the development of eye contact. This may be because

of accidental reinforcement stemming from the natural tendency of eye contact and approach behaviour to occur together, or through a chain of mediating stimuli and responses. The behaviour notes indicate that while the approach and exploratory behaviour increased systematically with reinforcement of eye contact, the pattern of affective responses was more complicated. The emotional response to the reinforcement was probably slightly positive. The reaction to eye contact *per se* seemed ambivalent (note that at first Tom tried to prevent *E* from gazing into his eyes). Actual bodily contact issuing from the approach tendencies evoked considerable aggression at first and generalized excitement later. Only after the aggression and excitement adapted, did affectionate responses appear. Further research giving attention to past reinforcement patterns and associations is needed to clarify these diverse emotional reactions.

SUMMARY

This study demonstrates the use of operant conditioning techniques in overcoming the visual avoidance of a 5½-yr-old Negro boy with infantile autism. The research included 33 sessions, each lasting 45 min. The paradigm involved baseline rates, conditioning, extinction, and reconditioning sessions. Stimulus control was demonstrated by alternating S^D s and S^A s. Finally eye contact was chained to the subject's emerging verbal responses. Related changes in approach, exploratory, and emotional behaviours were observed. Discussion focuses on problems of generalization and on the therapeutic effects of acquiring eye contact.

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THE VIEW FROM "THE COUCH"

FRANCES EBERHARDY*

A MAGAZINE article on Dr. Bettelheim's (1967) latest book was shown to me, since my son was once an "empty fortress". The reporter's first paragraph was as biting as a Wisconsin blizzard. "For the withdrawn and psychotic child, the yellow door (of the Orthogenic School) is their first experience with warmth and brightness." (1967, p. 70-71.)

Dr. Bettelheim's own words proved to be no more comforting. "The precipitating factor in infantile autism is the parent's wish that his child should not exist." (p. 125.)

I am willing to take Dr. Bettelheim's word that he has seen parents who wish that their child should not exist, or mothers like the one who told him that she "thought of him (her son) as a thing rather than a person" (p. 138), but in the 7 years that I have been active in a parent group for emotionally disturbed children, I have met no such parent. The parents in our organization are no different from the parents of normal children. In fact, with the exception of the cases where the disturbed child is an only child, they are the parents of normal children too. And their side of the story should be heard. Behaviour disorders are symptoms, and there may be a variety of causes. A's headache may be due to eyestrain, B's to a difficult boss, C's to a brain tumor.

My case study is necessarily limited to one, because it is only my own story that I know intimately.

To us, Peter our first born, was an unfolding miracle. He was our chance to see the world through a fresh pair of eyes, a reality to the oneness of our marriage, our vote of confidence in the future. But most of all he was himself, a new personality to be cherished.

He was a golden child, so handsome he might have been a girl. So agile—he scared his grandmothers green when he jumped from chair to couch to coffee table. And smart! We delighted in telling how he had outwitted us when he was so young that he could do little more than scoot around on his fat bottom. He loved to pull the plug from our old-fashioned bathtub and watch the water swirl down the drain. In order to bathe him before we lost all the water, we turned him to face the other end of the tub. After a few puzzled moments, he turned himself around and triumphantly pulled the plug. We bought a rubber mat to cover it, but again he quickly located the plug.

Peter nursed eagerly, sat and walked at the expected ages. Yet some of his behaviour made us vaguely uneasy. He never put anything in his mouth. Not his fingers nor his toys—nothing. This seemed like an odd complaint to my germ-

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conscious friends, but my husband and I had grown up in large families and looked at the germ theory with some scepticism.

More troubling was the fact that Peter didn't look at us, or smile, and wouldn't play the games that seemed as much a part of babyhood as diapers. While he didn't cry, he rarely laughed, and when he did, it was at things that didn't seem funny to us. He didn't cuddle, but sat upright in my lap, even when I rocked him. But children differ and we were content to let Peter be himself. We thought it hilarious when my brother, visiting us when Peter was 8 months old, observed that "that kid has no social instincts, whatsoever". Although Peter was a first child, he was not isolated. I frequently put him in his playpen in front of the house, where the school children stopped to play with him as they passed. He ignored them too.

It was Kitty, a personality kid, born 2 years later, whose responsiveness emphasized the degree of Peter's difference. When I went into her room for the late feeding, her little head bobbed up and she greeted me with a smile that reached from her head to her toes. And the realization of that difference chilled me more than the wintry bedroom.

Peter's babbling had not turned into speech by the time he was three. His play was solitary and repetitious. He tore paper into long thin strips, bushelbaskets of it every day. He spun the lids from my canning jars and became upset if we tried to divert him. Only rarely could I catch his eye, and then saw his focus change from me to the reflection in my glasses. It was like trying to pick up mercury with chopsticks.

His adventures into our suburban neighbourhood had been unhappy. He had disregarded the universal rule that sand is to be kept in sand-boxes, and the children themselves had punished him. He walked around a sad and solitary figure, always carrying a toy aeroplane, a toy he never played with. At that time, I had not heard the word that was to dominate our lives; to hover over every conversation, to sit through every meal beside us. That word was autism.

I took my worries to our pediatrician, as I had earlier, when my complaints were too nebulous for him to take seriously. He did a few rough tests, and said that he didn't think Peter was retarded, but that he might be deaf. Deafness could account for his inattention, lack of speech and unhappiness. True, Peter paid no attention to what we said, but he could locate an aeroplane before we were aware of its approach. And he could pick out any note on the piano that my husband played on his violin. Perhaps his deafness was in a high range, which would make speech unintelligible, even though he could hear sound. So we took Peter to an otologist, who too thought Peter might be deaf. He cleaned Peter's ears first and this frightened him so that it was impossible to check his hearing. We were told to bring him back in 6 months when the otologist would try again.

Fortunately, friends introduced us to the Tracy Course—correspondence lessons designed to help parents prepare their deaf children for speech reading. We learned that lip reading is too limited a term. Although it was soon apparent that Peter had no hearing loss, we found the Tracy lessons a godsend. For the first time, I could make sustained contact with Peter. We matched colours, pictures and objects and cross-matched them. We blew feathers to each other across a table. We made faces together in the mirror—at least I made faces. I crouched down to Peter's level so he

couldn't ignore me. We incorporated the neighbourhood children into games. They were delighted with the attention, but keeping Peter in a patterned game was like keeping a butterfly in a straight line.

On Christmas Day, after 4 months of using the Tracy materials, Peter now 3½ years old, talked for the first time. Peter was watching as my husband and a guest played a game that involved moving a button over the points of a star with the count of 1-2-3. While the adults were studying the next move, Peter picked up the button and moved it saying, "One, two, three". It was a Merry Christmas, indeed!

We also went to the university speech clinic where the students studied, taught and tested Peter. They excluded retardation, deafness and aphasia. The director referred me to a psychiatrist.

There was no doubt in her mind. "He has a childhood psychosis. A normal child would be exploring all the corners of my office." Peter was lying on the floor, staring unconcernedly into space. "It is only in the last 25 years that we have realized that these children are not retarded." Then she added consolingly, "At least, the prognosis isn't as hopeless as it used to be".

I was aghast and unbelieving, but only at first. The material the psychiatrist gave me to read was a description of Peter. What could possibly have caused a psychosis in our baby?

The only advice the psychiatrist gave me was to get Peter with other children. But he had been with other children. Our neighbourhood bulged with the post-war baby crop.

We sought help at the child guidance centre, and were assured by their approach. "We don't believe in labels. Let's just say that he is a child in trouble and we will try to help both of you."

I told my psychiatric social worker about Peter but her questions were directed to me.

How did I get along with my parents, siblings, the people at work? As well as most people, I thought.

Had I wanted the baby? Yes, I had gone through sterility studies to get pregnant.

Why had I wanted a baby? Why? I had never reasoned it out. They are a part of life, just like food, sunshine, friends and marriage.

How did I get along with my husband? Very well. She snapped to attention. "Why?" she asked, "Are you afraid to quarrel with him?" Well—we were both in our thirties. We had no serious problems and could laugh at our small differences. Years of separation by the war had made us treasure the ordinary joys of life.

How could I expect Peter to be warm when I was so cold to him? How could I be anything but cold after years of trying to warm up this icy child of mine? Even with your own son, friendship is a two-way street. We hadn't rejected Peter, he had rejected us. Even rejection was too strong a word. Peter accepted us as he did the furniture, as tools to get what he wanted. He simply didn't recognize us as people. Proving this was as difficult as proving which came first, the chicken or the egg.

I asked the psychiatric social worker for suggestions, but she had none to offer. What I did was not so important as how I felt about it. What could I read that would help me understand Peter? She could suggest no reading nor would she advise it. I sounded like a school teacher already. My use of the Tracy course was

held up as an example of my intellectual approach to motherhood. My questions as to the cause of Peter's trouble, she evaded—an eloquent answer, indeed!

I alternated between being overwhelmed with guilt, and feeling resentful at being treated like a child who couldn't face an unpleasant truth. If I could have felt that it was true, that we had been cold and dominating, or cold and indifferent parents, I think I could have faced that fact. At least I would have had something concrete to work with. Anything would have been better than that nameless, formless faceless fear. My self-confidence was fast disappearing. I was less and less able to cope with the problems each day brought. The psychiatrist said he wasn't able to reach Peter. We could see no improvement in him, so I stopped the sessions.

But today, I wonder how anyone could have expected that young, unhappy, childless divorcee who was my psychiatric social worker to help me.

Friends told us about a psychiatrist with another theory. He turned out to be a vast man with vast self-confidence, who put considerable starch into our backs. He gave us techniques which did make Peter less dependent. But after a year or so, we realized that he didn't have the whole answer either.

We consulted a neurologist next, because Peter's teacher had seen him in what might have been a seizure. We recalled too, that over a 2-yr period, Peter had stopped his play once or twice a day, saying, "Lost, lost", had lain down and slept, usually for just a couple of minutes, occasionally for 15 minutes and several times for an hour. This was unusual behaviour in a child who didn't seem to need much sleep. The neurologist thought Peter might be having frequent mild seizures which he compared to turning a light on and off in his brain, giving him a distorted picture of the world. Under medication, Peter's electroencephalogram became normal and his social behaviour improved so much that his teacher said that Peter seemed to have joined the human race. But the improvement did not last.

We felt that we had exhausted the local resources when we had a chance to consult Dr. Leo Kanner of Johns Hopkins Hospital. He said that Peter was autistic, but he added that an autistic child who talks as early as Peter did, might be able to lead a normal life, if he could get enough help. He recommended the Woods Schools at Langhorne, Pennsylvania.

Peter presented us with a challenge we couldn't ignore. He had learned to read with a minimum of help. His ability in arithmetic amazed us—he had worked out all the prime numbers to a thousand after hearing them referred to casually. He talked more now, no longer repeating tonelessly what we said. And he had straightened out his pronouns. But he had little spontaneous conversation. He had a disconcerting way of cutting through the social niceties to the pure logic of a situation. One time he asked a well-nourished aunt if she weren't too fat for dessert. Another time, after hearing a radio announcer's claims, he asked, "What does he mean, better tobacco? My science book says that the active ingredient in tobacco is nicotine and it is a poison." We tried to explain to him that nothing is so dear to us ordinary mortals as our bad habits.

Although indifferent to people, he was not afraid of them. He would go up to strangers, ask them how old they were, how much did they weigh and how much money did they have in the bank—much to the embarrassment of his parents.

How would the separation affect Peter? Wouldn't he really have cause to feel

rejected? And our daughter? Wouldn't she worry that she too might be sent away if she didn't behave? As a nurse, I could arrange my working hours during the time she would be in school, so she would not be left alone.

A residential treatment centre would be expensive, since everyone from the cleaning ladies up would have to have special training. It would take most of my husband's salary, but we thought we could manage if I went back to work. How could we live with ourselves if we didn't try? So we took our slim, handsome son to a school a thousand miles from home and left him with strangers. How desolate we felt, even though assured by my brother and his wife, who lived nearby, that they would fill in for us.

Peter spent 9 years at the Woods Schools, coming home for holidays and summers. The improvement came so gradually that we sometimes wondered if it were worth the effort needed to keep him there. But there were no satisfactory alternatives. Each year when we brought him home, we were filled with plans, high resolve, and optimism. And each fall we sent him back with a sense of failure, sadness and relief. For the job was too big for us. We underwrote psychotherapy, field trips, music lessons and orthodontia. We did not miss the luxuries we might otherwise have had, but we were saddened to see our bubbling extrovert daughter turn into a quiet, withdrawn child in the shadow of Peter's illness, and the changes it made in our lives.

For Peter too, life has been very hard. As a small boy, he had expressed his unhappiness by saying dejectedly, "out-of-tune" or "all mixed up". My mother used to say of us on our off days that we had gotten out of the wrong side of bed. Peter got out of the wrong side of bed every day and life was heart-breakingly difficult for him. When he was about 12 years old, he asked me, "What is wrong with me? I feel like a freak."

What could I say? If I said he was like everyone else, wouldn't that put the burden of his difficulties on him? If I told him that we all differ, that would be an evasion and he would know it.

How does the parent of any handicapped child explain that he has an extra burden to carry through life? It takes most of us adults a lifetime to develop a philosophy or religious outlook that enables us to live with the inequalities and suffering we see around us. And when the suffering is in your own child, you never really do accept it.

I'm not qualified to discuss the programme at the Woods Schools. It apparently gave Peter the help he needed. We, too, found support instead of blame. Peter has made a marginal adjustment, but a "near-miracle" nevertheless, according to his psychiatrist.

Peter chose his own vocation. He tunes pianos, giving them the same devotion that many teenage boys give to their cars. At present he needs help with transportation and arrangements. He does his own book-keeping. He is happy in his work and happy to be home again. We have found a programme for him, where young adults with a history of emotional difficulties meet for recreation and group therapy. I'm sure this is a factor in his continuing improvement.

So, Peter's is a success story. But couldn't this have been accomplished without so much damage to us?

Parents come to the guidance clinic with their hopes and self-confidence shattered.

Wouldn't it be possible for the counsellor to say, "We realize you have been having a hard time. Raising children is never easy and sometimes it is very hard. No parent is perfect and you must not expect yourselves to be. Neither are the circumstances of our lives perfect. Don't waste your energy in regrets and guilt. We will examine the past only so that we can improve our approach to the future."

"Often we don't know why children are troubled. Often we think that they have just learned poor patterns of behaviour. In some cases there may be brain or biochemical abnormality. Perhaps there is a combination of causes. Whatever is the reason, our job is to teach the child better ways to behave. We will try to help you understand your child and yourselves better. Perhaps we can improve your child's adjustment to the world and your adjustment to each other."

Wouldn't it be possible to talk on a personal, friendly basis to parents? When you, the counsellor sit across the desk from us, pencil in hand, unresponsive, neither praising nor condemning, not even laughing at our jokes, you set up a barrier we can't bridge. You don't really get to know us. This is not the atmosphere in which we parents can tell you what is in our hearts.

One of the boobytraps of counselling is the professional language. Not the frankly technical word, but the common word, used in a special sense. At one time, I told of some puzzling behaviour and ended, "How do you treat a child like that?" My counsellor asked me why I thought I should treat my own child. If I could have identified the shift in the meaning of the word "treat" at that time, it wouldn't have mattered. Instead, I only felt confused, discouraged, and somehow guilty.

Another problem is how to interpret the parental behaviour. Parents adapt themselves to the personality of the child, often unconsciously. What may seem like oddities in the parent may be just such an adaptation. My counsellor didn't bother to conceal the scorn in her voice when she asked my why I didn't talk like a normal person. She overheard me asking my unhappy son, "What are the words?", a phrase I had chanced on which Peter answered when he didn't answer the usual question, "What is the trouble?" A mis-shapen key that works is a big improvement over no key at all.

Working in a nursery, I have been impressed with the fact that the infinite variety in people is already obvious in the newborn. I recall vividly one child who cried constantly, even after feeding. You would have thought we had poisoned him, as his screams dominated the nursery. I asked the pediatrician about him, some months after he had gone home. "Well, you know", he drawled, "the parents are rather nervous people." It seemed obvious to me that the baby had inherited his nervous system from his parents, he had not become irritable from living with them. That type of inheritance is not questioned when the mother of a baby with a small appetite tells you that neither she nor her husband eats very much.

I never doubted the good intentions of the people who counselled me. But counselling is in its infancy and methods and attitudes can be improved. We all make well-intentioned mistakes. In our nurseries we used to give oxygen freely to premature babies. We no longer do since we have learned that it may cause blindness.

Parents want to be treated as partners in the job of helping their troubled children. It takes courage for us to come to you, admitting failure in this, the most

important job of our lives. We have read in the newspapers that there are no problem children, only problem parents. And we are worried sick. What will become of this child if we can't get help now? We need your support. We need understanding of our child. We need techniques—you can't express love for a child in a vacuum, and an autistic child's unresponsiveness does leave his parents in a vacuum. Let us not belittle parents, their observations, their abilities. Whoever else works with our children, we are their principal contacts with the world.

Perhaps I am beating a dead horse, but other parents tell me that my experience with guidance is not unique. It has taken me a long time to find the courage to speak out. We parents have much to learn from you and we want to learn it. But if you are going to teach us, you should know how we feel.

SUMMARY

The charge that the parent of an autistic child wishes "that his child should not exist" is not borne out by my experience or by what I have seen in other parents of emotionally disturbed children whom I know.

Guidance counsellors can help parents by giving them support, understanding of their child's deviant behaviour, and by giving them techniques for dealing with it, all in an atmosphere of friendly cooperation.

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BOOK REVIEWS

Learning Theory and Social Work. DEREK JEHU. Routledge and Kegan Paul, 1967, pp. viii + 139. 21s.

"LEARNING THEORY", says Derek Jechu, "has not been deliberately tested and exploited in social work, and until it is, no valid judgment of its value can be formed." The point is well taken: let it be a challenge to the Freudian to be rational and objective.

Since "learning theory is not at present an important part of social work education", the author ably summarizes the essential concepts, and then explores in more detail the implications for personality theory of experimental work on responses to stress, on learning as a determinant of personality ("the operation of other determinants is not denied") and "a learning approach to the aetiology of neurotic, psychotic, psychopathic and criminal behaviour".

In general the writing is admirably lucid, and seems to be addressed to the Absolute Beginner (in respect of learning theory). However, it is startling for such a reader to find in chapter 5 that the introvert ("quiet, introspective and well controlled") "has an excess of excitation over inhibition" while "the opposite is true of the extrovert" ("active, sociable, impulsive and aggressive"). Rushing to the library and pulling Eysenck from the shelves, one finds at last that the excitation and inhibition in question should be preceded by the adjective *cortical*. Hence the apparent paradox, since it is the cerebral cortex which inhibits impulsive behaviour, so that inhibition of the inhibitor results in behaviour commonly regarded as uninhibited. However, this is the only serious failure of communication in an otherwise lucid book.

What has learning theory to offer the social worker? Perhaps we should acquire those "clinical skills not included in contemporary social work education" and thus qualify to treat homosexuals with a mixture of drugs and what would in another context be classified as pornography. However, in all fairness, one must admit that in the treatment of most other conditions the desired behaviour is rewarded with sweets, or simply by verbal or non-verbal expressions of approval. However, it all sounds rather mechanical, and one begins to wonder when the treatment machine will make psychotherapists and caseworkers redundant. We learn with some relief that "normal psychotherapy" (surely a rather vague term in this context?) has been found more effective than complete silence in reducing anxiety, while alone with a tape-recorder, the patient actually becomes more anxious.

It even appears that social workers are already practising extinction, counter-conditioning and operant conditioning without knowing it, as well as stimulating imitation and insight learning. "The extinction of anxiety varies systematically with the permissiveness of the therapist. A client's responses to a social worker's warmth, sympathy, attention, interest, concern and professional discretion and competence may be used in counter-conditioning. . . . Many social workers have a parental role which involves presenting appropriate models to children and adolescents in . . . interpersonal relationships, moral behaviour, dress and the management of money." Also "in approaching problems in a rational way, and considering possible solutions systematically and logically, a social worker provides a model of adaptive problem-solving behaviour which a client may imitate, not only currently, but in future times of stress".

Transference is regarded as an example of stimulus and response generalization, and if this distorted perception can be rectified "the modifications can be generalized back along the gradients, so that the client is less likely to see punitiveness where it does not exist or to react with anger or fear inappropriately."

Indeed, many passages in this book could be seen as translations into another language of writings

by Hollis and others on casework technique. This may possibly do social work some good in academic circles which prefer the formulations of learning theory to those derived from psycho-analysis. How far it will improve casework practice to be able to formulate it in these terms is dubious. Jechu suggests that deliberate exploitation of learning processes would maximize their effect, and that this will require changes in current study and diagnostic practice. In a final chapter on the ethical implications of his approach, he rebuts the objection that it is excessively controlling or directive, by arguing that social workers do in any case set out to influence their clients, and that even when the goal is jointly chosen by client and worker, the outcome cannot be unaffected by the latter's professional and personal value systems. This is, I think, perfectly true, but this is not what troubles one. The real objection is the emphasis on changing the client's *behaviour* rather than enabling him to change it himself; there is some flavour of puppetry or of training animals for the circus, some lack of respect for human dignity. One cannot deny the value of restoring speech to schizophrenic patients who have been mute for years, even by rewards of chewing gum; but what of those whose hunger was raised by injections of insulin, and who were then rewarded with fudge for solving problems of increasing complexity? Perhaps it is irrational to protest at the means whereby the therapeutic goals were achieved, but it is certainly hard to reconcile them with one's personal and professional value system.

ELIZABETH E. IRVINE

Questionnaire Design and Attitude Measurement. A. N. OPPENHEIM. Heinemann Educational Books Ltd. London. 35s.

THIS book is a very practical and down-to-earth introduction to the construction and use of questionnaires. It is intended for students of sociology and psychology, for market research and advertising research workers, and indeed for all who might at some time be required to draw up and use questionnaires for the purpose of ascertaining the attitudes of various groups of people towards various issues or products. Several chapters of the book deal with the design of surveys, the design of questionnaires, the wording of questionnaires, methods of scaling of attitudes, the use of projective and other techniques, and the quantification of questionnaire data. All these topics are treated clearly and succinctly, the most useful references are given, and advice and comments, as might be expected from a well-known expert in this field, are both pointed and sensible. Given the length of the book, and its intention of appealing to the non-expert, it is difficult to see how it could be improved.

There are one or two points, however, on which one might take issue with Oppenheim's use of space. For instance, factor analysis only gets two pages while scalogram analysis gets eight. Both theoretically and practically it may be doubted whether this is a sensible disproportion. Factor analysis is certainly much more widely used in this field than scalogram analysis and is probably of much greater practical utility; it has been well said that only trivial attitude scales show the property of reproducibility. Factor analysis, on the other hand, is a quite fundamental technique of analysis and might with advantage have been given a whole chapter. It is doubtful if any reader could get much of an idea from the two-page introduction and description offered him in this book. Oppenheim may, of course, have felt that factor analysis is too technical and complex to be explained in any detail in a book of this kind, but it is so fundamental that a more extensive effort might have been made.

Another doubtful decision has relegated experimental procedures in attitude study to a single page at the end of a chapter on projective techniques! In view of the known unreliability and lack of validity of projective techniques, this is a curious disproportion which is all the more puzzling as experimental procedures have so many obvious advantages in practice, as well as being much better aligned with the general field of academic psychology.

Apart from these doubts, however, this is unquestionably an excellent book in its field, which it is hoped will be widely read by those most likely to benefit from it.

H. J. EYSENCK

KENNETH SODDY and ROBERT H. AHRENFELDT (Eds.). **Mental Health in a Changing World.** Vol. I. Tavistock, London, 1965, pp. xxiv + 192. 35s.; **Mental Health and Contemporary Thought.** Vol. II. Tavistock, London, 1967, pp. xxix + 362. 55s.; **Mental Health in the Services of the Community.** Vol. III. Tavistock, London, 1967, pp. xxvii + 306. 45s.

AN INTERNATIONAL and interprofessional study group of twenty-five specialists representing fifteen fields of professional work drawn from eleven countries met for twelve days in June 1961. The distinguished gathering applied itself to little less than a "State of Mankind" reappraisal. They were to ponder not only the specific clinical issues of mental health—which had been studied and written about since the 1948 London Congress of Mental Health—but also the non-specific conditions of man in the rapidly changing twentieth century. Needless to say the outcome, the first volume of this series, was a sketchy and rhapsodic piece of work. In writing about these volumes the Editors were somewhat rash in stating a belief that those whose main interest is the promotion of mental health work would find this first volume the "most absorbing" of the three. Of course, the function of rapporteurs of group discussions is an unenviable one. When their loyalty to the group and to the cause keeps them at their task for three volumes, running up to some 300,000–400,000 words, there is going to be a great deal of repetition, of what had been said elsewhere, and indeed, of what has been said in the group itself. The collective minds of these sessions are not as creative as the individual minds which had participated. The themes of social change, industrialization, family breakdowns and community problems, had already been surveyed and scrutinized more systematically and usefully elsewhere.

The second volume continues to deal with the momentous sociological factors of personal adaptation and of mental health. In doing so, it is understandably preoccupied with the problems of the so called "developing societies" of Latin America and Afro-Asia. Population growth, racial conflict, and the rapid assimilation of a technological civilization, are the main themes. The inventory-like treatment of adaptation problems, as they arise in the wake of social innovations, does not lead to new insights, yet perhaps the sheer size of this rambling account does leave one with a panoramic and large-scale impression of the compass and nature of the mental health issues involved. Some of the most useful passages of this work are to be found in its account of discussions on problems of professional training. The idea that a so-called "core curriculum" is now to be evolved and specified for all training courses for the professions of personal service, has certainly deserved the sponsorship of this distinguished group, even if this idea is not a new one. Interprofessional education for the professions had for some time been known before this study group assembled. The relevance of mental health education to schools is another theme which is served well and stimulatingly.

The third volume is about miscellaneous matters which are grouped together as "Diagnostic, Therapeutic, and Prophylactic Action" and "Research". Here too the survey is at best useful in marshalling the known material. The record is at times also stimulating, especially when the individual testimonies of group members are quoted. For example, Dr. George S. Stevenson's observation "that it may frequently happen that the basis of an individual's driving concern with a particular human problem is essentially pathological although the result may be almost entirely beneficial. . . ." (page 31, Vol. III). This, one fears, puts the whole issue of mental health back into the unending philosophical reappraisal. If "health" and "illness" are not Measures of Man, what are? Certainly the three volumes contain long and almost free-associative discussions of conceptual and philosophical problems of this kind. The reading of this is relatively easy, but the reader may not always be in favour of an easy passage to nowhere in particular.

PAUL HALMOS

Studying the Child in School. I. R. GORDON. John Wiley and Sons, New York, 1966, pp. xi + 145. 38s. (cloth), 23s. (paper).

IN THIS book written for the practising teacher and student teacher, Professor Gordon sets out, first, to examine the nature of the learning situation. Much of what the author has to say here will not in essence be new to many teachers nor to well-taught students. He dismisses, for example, the idea of

fixed intelligence, and of development as an unmodifiable, "orderly unfolding". He sees the learning situation as dynamic and "continuously active": a gestalt in which all aspects of the child are interacting with each other and with the environment.

The interest and value of the book lie mainly in the author's attempts to bridge the gap between the research laboratory and the classroom situation by indicating ways in which research strategies and techniques can be utilized or adapted by the teacher in studying the individual child and the classroom environment. Professor Gordon draws upon the published work of many people including, for example, Piaget and Inhelder, Sears, Bruner, and Getzels and Jackson. His approach throughout is practical, wisely stressing that the techniques discussed are in this context means to the desired end of guiding the teacher's judgment and increasing his insight into the developmental needs of his pupils. The limitations and scope of the research tools, particularly when used "in the field", are critically examined.

The range of topics discussed will be clear from the chapter headings: Assessing Intellectual and Cognitive Organization; Assessing the Child's Personality; The Ecology of the Classroom; and Assessing the Peer Culture. The author deals, for example, with the assessment of intellectual development using a Piagetian approach; with the concept and assessment of convergent and divergent thinking; with self report scales; with rating procedures; and with sociometry.

This is no book for anyone who is concerned to teach subjects rather than children. There is also no doubt that the procedures discussed can only be carried out "at a price in time to the teacher". But for the teacher who is concerned to study his children and is seeking thoughtful and practical guide to techniques which will help him to do so, the book is well worth reading.

The gap between research and the classroom has been too wide for too long. In attempting to bridge this gap Professor Gordon succeeds remarkably well.

RONALD DAVIE

Four Years On. STAN GOOCH and M. L. KELLMER PRINGLE. Longmans, London, 1966, pp. xii + 167. 17s. 6d.

THE DESCRIPTION, analysis and treatment of the projective techniques used in this study provide the most worthwhile part of this report. The pupils were asked at both 11 and 15 years to write three essays entitled "Best Moment of My Life", "My Ideal Person", and "Looking Back at My Life", and they were also required to list "the most wicked things that anyone could do" and rank the six worst of these deeds. The longitudinal framework provided a unique opportunity to look at the development of pupils' hopes, views and moral development over time. The results, however, while interesting, are restricted in their value because of the small, relatively homogeneous and non-random sample that was used in the follow-up.

The earlier part of this project was a longitudinal study of 250 boys and girls at two junior schools with contrasting types of organization. One was traditional or "subject-centred" and the other progressive or "child-centred". Later the sample chosen was restricted in a number of ways: only those pupils of average or below average reading ability who were still at one of four secondary modern schools 4 years later were followed up; those at selective or private schools, and those who had left school and were unwilling to co-operate in the evenings, were not included. Thus a sample of 143 selected by reading ability at 11 years was finally reduced to eighty-one. For many tables these eighty-one are divided by sex and type of junior school, with the numbers in the four groups ranging from 15 to 22. The effects of social class and the structure of the secondary schools (single or mixed sex), although mentioned in interpretation, are ignored in the analyses.

The authors appear to be well aware of the limitations of their study. They write: "The general conclusions of the present study can only be of the most cautious and tentative kind". They do, however, go on later to say; "The full generalization, therefore, is that boys as a whole and the more intelligent girls do better in a traditional framework, while girls as a whole and the less intelligent boys perform best in a progressive framework". In view of the inadequacies of the data, this and other 'generalizations' do no more than reflect the authors' opinions.

JEAN M. ROSS

The Development of Personality. T. A. RATCLIFFE. Pergamon Press, London, 1967, pp. 118. 20s. As THE number of popular books about people and psychology increases, it becomes correspondingly difficult to find appropriate titles and this book, *The Development of Personality*, might equally well have been entitled "The Psychology of Everyday Life". Its aim is to provide a large-scale map recording some of the more important features along the route, but it also makes plain that detailed plans are available elsewhere. By intention it has no index and very few references for, as the author points out, it is meant to be a stimulus for further reading rather than a textbook.

Dr. Ratcliffe is a well-known university lecturer to nurses, youth leaders and teachers, and this book provides a useful introduction for social case-work students or, in Caplan's term, professional "care-takers" such as marriage guidance counsellors and health visitors who have to guide their clients at times of crisis. Written in everyday language, it very successfully accomplishes what it set out to do, namely, to provide a readable summary of the essentials of present-day theories regarding emotional development and personal relationships and how these theories dovetail with day-to-day practice.

Though relatively expensive, it can be warmly commended to magistrates, ministers, social science students and all those who are concerned with a broad approach to case-work.

R. F. BARBOUR

Children of Time and Space, of Action and Impulse. RUDOLF EKSTEIN. Appleton-Century Crofts, New York, 1966, pp. xxiv + 466. \$8.75.

This book contains a wealth of clinical material, carefully detailed and set down, which requires equally careful reading. Such clinical research will be especially interesting to those who are working with children or adolescents, in either an in-patient or out-patient setting.

For those not directly engaged in work with patients, or whose interests are primarily in personal ways of looking at these problems, seeing the difficulties as genetic or biochemical, or statistical, there is likely to be an increasing impatience with the whole endeavour. It is unfortunate that many of us who work in overloaded clinics are rarely able to get to grips with the material which is accessible in an analytic type of psychotherapy, but which requires the security of predictable, unhurried sessions, uninterrupted by 'phone calls and other crises. Dr. Ekstein has been skilful in giving a vivid presentation of the material, for he is aware that what is alive and dramatic to those directly involved may turn into a "boring repetitive narrative" for the future reader. He is also fully alive to the fact that the therapist's part is at least half the story so that any account which leaves this out must be of little value. This means bringing into the discussion the problems of the counter-transference, the irrational feelings and projections which emanate from the therapist. With children and adolescents these tend to be particularly strong, and not easy for the adult to bring into the open. For me the chapter on Counter-transference in the Residential treatment of Children was of great interest, for as the authors of this chapter state:

"The essence of the residential treatment process is that each child projects his inner world against the macrocosm of the residence. . . ."

There are then special difficulties for the therapist, who forms a unique relationship with the child. He begins to exist in the residence in the persons of his patients (i.e. in a sense they come to represent him) and complicated interactions take place with other staff members in accordance with this. The therapist becomes potentially very vulnerable to other staff members. Where the therapist has other responsibilities in the setting, such as overall responsibilities or administrative ones, there is obviously great scope for the generation of tension and unhappiness. To cope adequately with such situations, the needs of staff members for suitable training, supervision and support, becomes very clear.

The successful treatment of serious disturbance in these age groups, particularly of psychotic disorders, requires proper facilities and the availability of a well-trained team. Complicated and expensive measures are now fully accepted in the medical and surgical fields of medicine. This is not

yet so in psychiatry, and pessimism about psychotherapy is often generated because it is attempted in conditions which make failure almost inevitable. It would be good to think of this book being read more widely than by the immediate circle of those involved in personal therapy, for others might get a clearer insight into the requirements for adequate in- and out-patient treatment.

W. H. ALLCHIN

Biological Factors in Temporal Lobe Epilepsy. CHRISTOPHER OUNSTED, JANET LINDSAY and RONALD NORMAN. Published by The Spastics Society Medical Education and Information Unit in Association with William Heinemann Medical Books Ltd., London, 1966, pp. xii+135. 21s.

This is a report of some of the social demographic and psychological characteristics of one hundred children under 15, in whom the clinical diagnosis, temporal lobe epilepsy, had been confirmed by electro-encephalography. These patients were "drawn" from a larger population of more than 1000 children with seizures of all types.

The authors point out the great diversity of aetiology and mode of presentation of this condition. Their clear and simple presentation of varied data is a valuable contribution towards understanding the relationships between the many possible causes and the many possible ictal and behavioural phenomena. Tabulation of the raw material enables the reader to evaluate it at his own level of statistical sophistication.

In successive chapters they discuss various causal factors: the birth process (weight, oxygenation, trauma), other cerebral insults, status epilepticus and genetics (the frequency of seizures in siblings for various clinical groups is given). In Chapter V Ronald Norman discusses the pathology and pathogenesis, referring to his own case material and stressing the pathogenic importance of hypoxia, which may be perinatal, in febrile convulsions and repeated seizures, when excessive needs of the discharging neurons may lead to "consumptive anoxia".

Intelligence, the hyperkinetic syndrome, and catastrophic rage, are considered in separate chapters; their relationship is described to such factors as age of onset, frequency and type of attacks, and to the causal factors already considered. (Only those who had suffered cerebral insult or status epilepticus were intellectually retarded, the earlier the more severe.)

These findings suggest the prophylactic importance of effective control of seizures in the young, and of giving anti-convulsants in pyrexia to those genetically at risk of febrile convulsions.

The authors have demonstrated the great value of a biological approach, which tries to consider every aspect of the organism and its environment; it is a pity that their account of the social and family environment did not do justice to this important topic.

This book should be read by all physicians and researchers concerned with children, epilepsy, and behaviour disorders, as a source of information and as a signpost to more investigations with even more stringent methodology.

C. J. WARDLE

Occupational Information for the Mentally Retarded: Selected Readings. Edited by LOTAR V. STAHLCKER. C. C. Thomas, Springfield, Illinois, U.S.A., 1967, pp. xxii + 816. \$24.00.

Perspectives in Mental Retardation. Edited by THOMAS E. JORDAN. Southern Illinois University Press, U.S.A., 1966, pp. xiv + 358. 57s. 2d.

THE increasing attention paid to the problems of education and training relating to mental handicap is reflected in the steadily growing number of books dealing with a subject which used to interest only the medical specialist. It is even more significant that books by individual authors should now be followed by books containing "readings" of an assorted number of articles and papers published in various professional journals and only available in specialized libraries. The mere fact that pub-

lishers consider that there is a market for reprints of published work in this field indicates their belief that mental handicap now attracts a comparatively large reading public.

The two volumes under consideration contain an appreciable number of papers by many authors and thus give a good impression of the variety of effort and intention which have been responsible for the many changes in a field which used to be stagnant and devoid of constructive ideas. The contributions also reflect very markedly the unevenness of the effort, and the fact that there is much enthusiastic trial and error but little systematic appraisal of the effectiveness of the new methods advocated.

Occupational Information for the Mentally Retarded is probably the more useful volume of the two. It has limited itself to one area only and devoted 816 pages to it. *Perspectives in Mental Retardation*, attempting to give some information on many aspects of mental retardation, treats the same subject on only 45 pages. *Occupational Information* has more or less succeeded in collecting most of the relevant literature and all specialized articles published in the U.S.A. in the seventy-nine articles which comprise the book. An attempt is made to get some order into the mass of information resulting from this, by presenting the articles under the headings: Guidance, Occupational Training, Work Experience, Sheltered Workshop, Community Placement, Follow-up Studies. Separation of themes has not been very successful because there is much overlapping of subject-matter. An index of subject and topic headings would have been extremely useful in a book of this type and the absence of it must be considered a serious shortcoming. Whilst simply dipping into the volume is a highly stimulating experience, searching for definite information, as for example on the value of incentives, time appreciation, workshop climate, etc., necessitates looking laboriously through most of the contributions because the titles are generally not specific enough to suggest whether these points are mentioned.

The Editor of *Occupational Information* obviously refrained from making judgments regarding the value of much of the work which is reprinted, but attempted to provide as varied a report on different approaches and "solutions" as can be culled from available publications. The book is, therefore, not authoritative in any way but it lets the reader partake in the experiences and findings relating to work which is still very much in its pioneering phase. It is thus a most useful source book on a particular aspect of rehabilitation work in mental retardation and can be recommended as such.

Perspectives in Mental Retardation is a tidier selection of articles carefully chosen to illustrate many aspects of mental retardation work under headings such as Dimensions of Retardation—The Family—The Institution—Characteristics—Language—Psychodiagnostics, etc. Each section is represented by only three titles which decreases the usefulness of the book very markedly. Moreover, the selection of papers is not limited to twentieth-century work (as the title would suggest) but includes also early work on Mental Retardation (e.g. Langon Down's classical paper on Mongolism), which results in giving glimpses of the field rather than systematic information about it.

The thirty-three articles were collected from American and British contributors and, having a much wider choice in subject matter and authors, Professor Jordan has succeeded in maintaining a higher level of workmanship in the contributions than Professor Stahlecker. Again no index has been supplied, but its absence in a book of additional readings is less important. This book is probably most useful when read in conjunction with a modern textbook on mental deficiency, such as that by

Clarke & Clarke. It will help in broadening the view rather than in providing information.

H. C. GUNZBURG

Psycholinguistic Papers: The Proceedings of the 1966 Edinburgh Conference. J. LYONS and R. J. WALES (Eds.). Edinburgh University Press, 1966, pp. 243. 42s.

This book reports the proceedings of a Conference sponsored by the Research Board of the Faculty of Social Sciences in the University of Edinburgh. There were five papers, distributed in advance to the participants, followed by comments by invited discussants and more general discussion.

J. P. Thorne raises the question of how we understand an utterance and points out some of the snags in using an analysis-by-synthesis model—i.e. understanding an utterance through the hearer constructing an internal sentence to match it. In the second paper Wales and Marshall discuss the

organisation of linguistic performance across a wide area within the field of psycholinguistics. For example, after dealing with association, phrase structure, and transformational models, as explanations of aspects of serial order in language, they attempt to schematize the processes of linguistic performance.

For the reviewer the most interesting papers were the third and the fifth. In the former, McNeill deals with the creation of language by children, and tackles, amongst other things, the problem of the speed with which children acquire language. In the latter, Klima and Bellugi suggest rules for the use of negation and question in children's language. The fourth and rather complex paper by Forder and Garrett deals with their views on linguistic competence and performance.

The reported discussions are equally important. For example, Oldfield asks questions about the value of current refinements in the analysis of syntactic structures and emphasises how much we need more information about the structural requirements of language for effective communication in different situations. Again, Donaldson suggests that we need to study development in the first 18 months of life to see if this period serves in some degree as a preparation for the acquisition of language rather than assuming that the means for acquiring language are wholly biologically given.

So brief a review cannot do justice to the book. Psychologists, psychiatrists and educators should study it to see a little of what is happening in psycholinguistics. Although it is not an easy volume to read, the effort will be repaid.

K. LOVELL

When a Child is Different. Dr. MARIA EGG. George Allen & Unwin Ltd., London, 1967. 25s.

WHAT helps families with handicapped children? Each such family has its own problems which vary in degree and kind. The help they may receive is given at many different levels with variable results. It is not only what is told but how it is told that matters. The first professional contact, the social services which follow, a place in the training centre and transport there and back all play their part. Books written to help families are plentiful enough but here is yet another.

The strength of this book lies in the author's feelings as a parent which enables her to speak as a professional and as one of them: "it is a great relief to talk to someone who really understands what goes on in your heart".

The level at which this book is written is perhaps best illustrated by the chapter "The Parents' Attitude". This is an all important, subjective and highly emotional topic. The final acceptance of a handicapped child and coming to terms with it is the severest struggle. When she writes: "but this inner peace is not a gift. You must work hard for it", she is right but she does not say how it can be done. The author's attempt is to influence parental attitudes by empiric teaching, "you should try and agree on all questions", may have some effect but I wonder how much. The help parents need, is the opportunity to *work out* their personal and interpersonal emotional conflicts with a counsellor who is skilled and case-work orientated, a service which is only just beginning.

She faces the initial feeling of disaster which so frequently occurs, whilst pointing out how active interest and stimulative "systematic daily practices", produce the most unexpected results. She shows what can be done positively and gives practical help on such matters as toilet training and encouragement towards independence.

This is a good practical manual which I am sure many parents will find helpful and supportive. Anything which can do this is worthwhile, for "theirs is a hard lot and the gains are small".

D. MORRIS.

Factors Associated with Impairment of the Early Development of Prematures. M. D. S.

BRAINE, C. B. HEIMER, H. WORTIS and A. M. FREEDMAN. Monograph Soc. Res. Child Dev. 1966, 31 (4), University of Chicago Press, pp. 92. \$3.00.

THIS monograph reports a well-planned and executed prospective follow-up study of Negro premature babies in New York. Its conclusions about the factors which influence early development require careful and cautious consideration.

The babies enrolled in the study consisted of 351 singleton prematures without evidence of blood group incompatibility who had survived over 24 hr, and a small control group of 50 full-term babies selected at random. Examinations, which included tests of the grasp and Moro reflexes, gross motor abilities, and cognitive and mental items from the Gesell and Cattell scales, were performed at 4 days, 6 weeks, and at 4, 7½ and 13½ months of age. The influences studied consisted of six maternal factors, four neonatal factors, and two social factors, all of which were well defined. The observations were analysed statistically.

As a group the premature babies performed less well than the full-term babies, and the authors suggest that this supports the hypothesis that there is a continuum of neurological damage in prematurity. They found that boys progressed less well than girls; and that all four neonatal factors (hyperbilirubinemia, hypoxia, weight loss and infection), and one maternal factor (toxemia) influenced early development. In particular they described two possible associations between the adverse influences and the type of impairment. Weight loss and hypoxia together appeared to be associated with early and persisting delay in gross motor and visual development, and maternal toxemia appeared to be associated with a gradual onset of general impairment.

These are important observations if they are confirmed. Some caution is necessary regarding their immediate and unqualified acceptance because of weaknesses in the study. The follow-up was not completely satisfactory; only 53 per cent of babies were seen at 7½ months and 81 per cent at 13½ months, and the duration of follow-up (15 months) was not long enough for all the neurological defects to emerge. The control group was small. It is particularly unfortunate that the dysmature babies were not identified as a separate group for study, and that those babies showing unevenness in their development were not studied and reported in more detail.

Whilst these criticisms indicate the need for care in the appraisal of the study they do not detract from the value of this painstaking work which should be examined by everyone concerned with child development and prematurity.

KENNETH S. HOLT

Adoption Policy and Practice. IRIS GOODACRE. Allen and Unwin, London, 1966, pp. xii + 203. 32s.

HERE is a book which throws some light at last on aspects of adoption procedures which had remained obscure. While it is not true to say, as the blurb does, that it is one of the few investigations to be made since legal adoption was introduced in Britain in 1926, most of the quite numerous studies undertaken up to now have been American. Their emphasis has generally been on the development of the adopted child as compared to the non-adopted, and in particular on the rate of *success* among adoptions—something difficult and perhaps impossible to define. Here the emphasis is on the procedures involved in adoption—selection of parents, placement, supervision, legal decisions—as seen by the adopters and by the social workers concerned. The author's aim was to find out whether the procedures in use do on the whole work for the benefit of all concerned. Case records of all adoptions in one area were studied; ninety families who had adopted a few years before the time of the study were interviewed; the policies of the 14 adoption agencies in the area were scrutinized through interviews with their staff. The book suffers from the obvious disadvantages of a one-man survey carried out by post-recorded interviews; but what it lacks in precision is compensated for by the right choice of subjects for study, and a readable presentation. It indicates many areas for more precise future investigation.

Many of the findings support those of previous studies. The respondents' deep feeling about their sterility, their doubts and fears about adoption, the discouraging attitudes of friends and relatives, the great difficulty of explaining their status to the children—especially acute, the author points out, where children are adopted by relatives—have all been noted in previous studies. It is valuable to have them confirmed, but even more valuable—and disturbing—are the chapters on the practices of the adoption agencies in the study area, since this is a subject which has been quite neglected. The agencies varied a great deal in size and sophistication, and all tried to cope in one way or another

with the disparity between the numbers of would-be adopters and of children believed to be suitable. Rates of acceptance of applications ranged from one in four to one in twenty. One society stated that they could only investigate every tenth application. *Matching* child and parents occupied an important place in agencies' theory but can have meant little in practice, since most children were under six months old at placement, and most adopters came from the upper end of the social scale, whereas most babies came from the lower. Nevertheless, one society kept babies for a period in their residential nursery in order that their temperaments could be studied. An active infant who sucked lustily would, they felt, be well suited to an enterprising and lively couple! Presumably unenterprising parents were found for the unenterprising babies.

To the author's many wise suggestions for improving adoption services two more might seem to be indicated. One is that psychologists clarify, and then teach to those working in the social services, an outline of what is known about the role of heredity and of environment, as applied, for instance, to the relative effects on a child's development of parental misdemeanour or of a prolonged stay in a residential nursery. Secondly, and not unconnected with a more rational attitude to hereditary influences, the would-be adopters who so outnumber *suitable* children might be helped to offer homes to the *unsuitable*, who for reason of their colour or other handicap still grow up without homes of their own.

ROSEMARY DINNAGE

Public Education for Disturbed Children in New York City: Application and Theory.

P. H. BERKOWITZ and E. P. ROTHMAN (Eds.). C. C. Thomas, Springfield, Illinois, 1966, pp. xvii + 376. \$12.50.

THE FIRST and major part of this work consists of contributions from practitioners and psychologists who comment upon their own experience and practice within the various settings where education is being provided for emotionally disturbed children. There are two contributions about day special schools, another about full-time special classes within normal schools, another about the education unit within the well-known Bellevue Psychiatric Hospital, and other contributions about units within other treatment centres, a youth detention centre, a prison (with young men aged 16-21) and a children's home. In addition, there is a chapter about clinical services linked to the normal schools.

One is impressed by what has been achieved in New York, largely since 1946—40 day schools, 92 guidance classes, and clearly many teaching units in hospitals, children's homes and other settings where the New York City Board of Education provides the teacher.

The pattern of provision is similar to that prevailing in the English scene, as is the two-fold philosophy behind the provision; namely, to provide education for disturbed children wherever they happen to be, education being explicitly regarded as a major part of therapy, and to relieve the ordinary schools of those children who present an excessive problem of management or disruption.

One or two of the practitioners, in particular Dr Rothman (Livingston Day School for Disturbed Girls) and Wanda Wright (the Bellevue Psychiatric Hospital School), pioneered their units against the familiar difficulties of unsatisfactory or makeshift accommodation, lack of materials and little in the way of a working philosophy. Teaching or clinical pioneers elsewhere, and others in process of developing their own competence, will readily identify with the problems and experiences. They cannot fail to be stimulated by these optimistic accounts from such experienced practitioners who after years of this demanding but dynamic work write as if they were ready to start again!

The justifiably editors say that much has been achieved in New York City, but they stress the need for more help for children, and in particular for improved co-ordination of services—this to be achieved by concentrating all services, even more than now, upon the school. They talk of the "Clinical School" from which would grow the total care, both physical and emotional, for children in need. It would seem that in this country we have already moved somewhat nearer this objective with school health services, school psychological services (modest though these still are), educational welfare services and the emerging counselling services in schools, although we are far from having dealt satisfactorily with the co-ordination of services or with the provision of appropriately trained personnel of all kinds,

Drs Berkowitz and Rothman see the base-line task as that of helping the normal educational system to flex itself more than it knows how to at present, in response to the needs of the many and varied vulnerable children. This is a colossal task in the face of the weighty social and psychological problems bearing upon schools, but unavoidable in all developed communities where education matters.

Differences in practice seem to be at the level of organization—for instance, the day special schools are larger units (150 children or more) than we have in Britain, and single-sex classes or units, at any rate at the secondary age, seem to prevail. In matters of philosophy, teaching objectives, method and problems (especially the high incidence of backwardness in reading) there seems to be great similarity, which is somehow comforting.

It is necessary to draw attention to the emphasis placed by all the contributors on the therapeutic value of education and learning in its widest sense. Even with the most disturbed pupils, it seems agreed that the teacher's job is to help the child to function within the classroom. The teacher is less concerned with aetiology than with the child's present reaction and how she can develop a positive constructive response in the child. She is less concerned with clinical concepts of ego defence and more with ego enhancement through successful educational experiences and achievements. She and the psychotherapist have the same goal—that of providing psychic comfort and ease from stress—but they set about it in different ways. In the educational environment, structure, basic routines and limits, within an atmosphere of understanding and tolerance of different needs, rather than permissiveness, are the mode. The teacher is regarded as one of the key people in the child's therapy. As such she is no minor guest relative to superior clinicians at the case conference feast, but a full member in her own right with her significant contribution to make, and from whom the clinicians themselves learn about group problems. As a front-line worker, she needs training in psychopathology through special courses and continuous contact with clinicians. If contact with trained clinicians does not make her better able to use herself in *teaching*, then the clinical service has been of little use. In a situation where the need for help far outstrips, even in the foreseeable future, the supply of individual help from psychotherapy, more and more shift is made towards helping children within education groups not as "pis aller" but with education itself regarded as one of the major tools of therapy, mediated by educators with sufficient clinical insight into their own and the children's psychology.

The second part of the book goes into theoretical discussions in a more detailed way. In particular, there is an interesting discussion in Eli Bower's chapter on historical attitudes to problems of the mind. He brings out the shift from the earlier prevailing intrapsychic conflict model, with its emphasis on delving into the past to relieve old conflicts and so reduce anxiety, to the social competency model as clearly adopted by the New York practitioners, with its emphasis on helping the client to cope with anxiety and to develop personal skills. It is clearly arguable that the social competency model may be taken too far and that there could be psychological dangers in this. Readers must judge for themselves. The chapter on "The Concept of Clinical Teaching" by the editors offers a most valuable analysis of the synthesis of clinical understanding with educational management within the day-to-day classroom situation.

The book is long and sometimes repetitious as different contributors repeat the same points; there is a lack of research information, although several of the situations seem to have research evaluation written into their scheme of things; but at every level, be it organizational, the teaching of reading, the management of crises, the difference between practice of psychotherapy and teaching, or the general philosophy, there is the certainty of profit from the close study of this book. We are indebted to Dr Berkowitz and Dr Rothman for making it possible for others to share in New York City's experiences in this field of educating disturbed children.

M. C. ROE

The Classification of Behaviour Disorders. Edited by LEONARD D. ERON. Aldine, Chicago, 1967, pp. viii + 180. \$5.95.

Psychopathological Disorders in Childhood: Theoretical considerations and a proposed classification. Formulated by the Committee on Child Psychiatry, Group for the Advancement of Psychiatry, New York, 1966, pp. iv + 343. \$3.50.

1967 WAS THE year in the World Health Organization 10-year programme on the standardization of

psychiatric diagnosis, classification, and statistics, set aside for consideration of disorders of childhood. These two volumes on classification are therefore particularly timely.

The book edited by Professor Eron is concerned with the concepts implicit in attempts to classify. Contrasting and contradictory views are expressed in a spirit of lively debate by Robbins, Zubin, Eisenberg and Szasz, in what were originally a series of lectures at the University of Iowa. Only Professor Eisenberg's chapter is specifically concerned with disorders of childhood, but there is something of interest for the child psychiatrist in each of the others. Psychoanalytic contributions to classification are discussed historically by Dr Robbins (without, however, mention of the work of British analysts, such as Glover), and Professor Zubin considers the problems of measurement specifically in relation to the diagnosis of adult schizophrenia, but with wider implications. Those psychiatrists who deny the value of any classification are represented by Professor Szasz who provides a spirited and outspoken attempt to demolish all classification—"it is a social act, designed to demean the patient . . . to rob him of his humanity . . . to constrain him". This extreme view is sharply rebutted by Professor Eisenberg in his discussion of the chapter.

However, substantial controversies persist even amongst those who accept the need for classification. The dispute which receives most attention here is that between those who view mental disorders as extreme variations of normal characteristics, so that there is no sharp demarcation between health and ill-health, and those who consider that mental disorders constitute separate diseases with a discontinuity between health and illness. Professor Eisenberg clearly summarizes the need for classification and outlines its possible uses; his arguments for the discontinuity hypothesis are well put, but more controversial. He follows this by a good short account of present knowledge concerning psychotic disorders in childhood, in the form of a proposed classification.

The book is worth reading for its useful discussion of important issues in relation to classification. Nevertheless, it suffers from a multiplicity of somewhat disparate foci, so that there is some lack of continuity between chapters. The production of the book also leaves something to be desired—the review copy was already falling apart at the seams at the time of receipt.

The G.A.P. report represents the results of many discussions held over the course of several years and in many ways it is a much more ambitious document. It sets out to review theories of development and concepts of classification against a historical background, and then proposes a comprehensive scheme by which psychopathological disorders in childhood may be classified. This serious and thoughtful attempt to face the many problems of classification demands the detailed consideration of all concerned with child psychiatry. No future attempt to classify child psychiatric disorders will be complete which does not take into account what the G.A.P. committee has put forward in this volume.

In many ways it represents considerable advances over previous classificatory schemes, but serious deficiencies remain. Perhaps the most important of these is shown in the way the committee set about its task. Like the majority of previous approaches, the G.A.P. report is mostly an arm-chair philosophy. At no point in the book is there any attempt to compare clinical or research findings concerning the various diagnostic groups which are proposed. There is now a considerable literature on differences between diagnostic categories with respect to aetiology, prognosis, response to treatment, etc., but this is almost entirely ignored. Apparently, also, no attempt was made to see if the different clinicians (even those on the committee) meant the same thing by the same terms (as might be examined, for example, by the diagnostic exercises being used in the W.H.O. programme on classification).

The G.A.P. committee, initially broad-based, came to be dominated by psychiatrists with a psychoanalytic orientation. This is reflected in the proposals. Although the committee claims to have attempted to put forward operational definitions of clinical categories, what is a non-analyst to make of a statement that the category of *psychoneurosis* "is reserved for those disorders based on unconscious conflicts over the handling of sexual and aggressive impulses"? The provision of a category of "healthy responses" (which might include normal grief reactions or the separation anxiety shown by most pre-school children) is valuable, but the criteria of what is "healthy" are rather vague—"a degree of flexibility, drive towards mastery . . . the balanced use of defences, . . . the existence of a self-concept", etc. The category of "reactive disorder" may be useful, although American studies suggest its current use is not very meaningful. It is also unfortunate that there is no provision for any differentiation of reactive disorders involving disturbances of the emotions, from those consisting

predominantly of socially disapproved conduct. The category of "developmental deviations" has the curious attribute of conditions at opposite ends of the spectrum being included in the same category. For example, precocity in speech development is classified with delay in the acquisition of speech, reading backwardness with accelerated intellectual development, etc. It is also unsatisfactory that antisocial disorders seem only to be diagnosed as under two of the 14 sub-headings of "personality disorder". The classification of "psychophysiological disorders" according to organ means that conditions such as psoriasis, alopecia, urticaria and acne are all diagnosed under the same heading. It is hard to see what useful purpose this could have. "Psychotic disorders" are well considered. Their subdivision has something in common with that put forward by Eisenberg, and in both schemes early infantile autism is distinguished from schizophrenia and other psychoses of later childhood.

It is evident from these remarks that this reviewer considers that the G.A.P. proposals are well short of anything likely to achieve general acceptance. Nevertheless, the G.A.P. committee deserves praise for having supplied a thought-provoking review of the issues involved. The proposed scheme, although inadequate, in many respects does provide a valuable basis for future attempts, and doubtless further discussions (such as in the W.H.O.) will be the more productive for having the advantage of the G.A.P. committee deliberations.

MICHAEL RUTTER

The Concept of Human Development. Basic Concepts in Psychology Series, E. B. McNEIL.

Wadsworth Publishing Company, Belmont, Cal. 1966, pp. xi + 82. \$0.50.

BASIC CONCEPTS IN PSYCHOLOGY is designed as a series of brief paperback volumes together constituting a textbook for beginners in psychology. There are a number of obvious advantages to such a scheme as compared with a single introductory text. Authors of the present series were asked to devote about half their space to elementary and general concepts, and the remaining half to developing lines of particular interest. The series as a whole may therefore be expected to be lively reading and the present volume is a good example. Many of the topics that one would expect to be treated in a volume of this sort are well covered. Among those which receive special emphasis are the contrast between expectations of home and of school, the effects of early and of late maturity and a discussion of separation experiences. The provision of references and the sophistication of the presentation are admirably suited to the serious beginning student. Nevertheless, one is a little surprised to find social motivation attributed to secondary reinforcement without any reference to Harlow—in a book which is otherwise up to date and remarkably free from dogma. Again, there is almost nothing on the subject of cognitive development. Taken all in all, the present volume will probably be most useful to students who are interested in the series as a whole.

E. A. LUNZER

Room to Grow: A Study of Parent-Child Relationships. CARROLL DAVIS, University of

Toronto Press, 1966, pp. xxvi + 214. \$6.00.

THIS UNPRETENTIOUS book contains much wisdom. It is a study of parent-child relationships as they affect the growth of personality and is based on developmental histories collected over 20 years at the University of Toronto Institute of Child Study.

Balance is a central characteristic of the book—one which the author develops conceptually and also manifests in her style and presentation. Balance, first, between the viewpoints of parent and child; for once, one feels that these have really been given equal weight, considered with equal care and sympathy. Balance, too, in the emphasis given to the child's needs for care and for freedom, and to the corresponding aspects of the parental role. The author treats dependence and emergent autonomy not as the two poles of a single continuum, but as two distinct positives that co-exist in states of balance or imbalance in various areas of a child's life at any particular time; and similarly with parental care and respect for the child's freedom to grow. These four distinct but interacting variables form a conceptual frame within which the shifting balances, conflicts within and between persons, and developing personality structures of seven children are traced from age 5 to age 20. The final chapters contain an analysis of the parental role and of possible faults of relationship, in terms

sufficiently concrete to be meaningful (and helpful) to any intelligent parent and at the same time sufficiently schematic to call for critical inspection by the theoretician.

Mrs Davis assesses the balance of the relationship in each of six areas for each 5-year period. She uses a simple diagram, representing her four main variables by dots in the four angles of a cross. On the parents' side of the vertical, a dot above the horizontal represents care, a dot below indicates respect for the child. If both dots are present these two ingredients are said to be adequately balanced; imbalance in either direction is shown by absence of a dot. Similarly on the child's side, reliance is weighed against "emergence".

A satisfactory fourfold balance indicates a state of reciprocal trust which paves the way for gradual emancipation of the developing person. As no attempt has been made to quantify the variables, these assessments (based on teamwork summaries of the raw data) are frankly subjective. The binary choice, dot or no dot, must often have been difficult to make; it frequently has to be qualified, or varied within the period, and one first wonders whether numerical ratings or ratios might have been more satisfactory, but these would have implied absolute scales, norms and comparability from case to case, none of which (I gather) the author wishes to assume. Her judgements are based not solely on the behaviour of individuals but on the total pattern of interaction, and embody inferences concerning the way each person's behaviour is perceived by the other party to the relationship. Such inferences, based on records 30 years old, are necessarily speculative; it is a tribute to the research team that they can be made at all, and substantiated as well as they are.

Much, of course, is left out, but less than one might suppose. The four key variables are given far wider meanings than their names, or any single terms, would imply; the six areas considered—family living, personal care, use of money, school, activities, social life—cover most aspects of "emergence". But one may question how validly development in mid-childhood and adolescence can be viewed in terms of the relationship with the mother alone; the author (who has written elsewhere on sibling interaction) herself deplores the scant information on father and sibs in this, as in most, longitudinal studies. And although we glimpse some of the children in nursery school, there is no record of their home life before the age of five, when the mother-child bond was being forged and the foundations of personality laid.

Granted these limitations of the raw material, how useful is the author's handling of it? Her method seems to me to open up possibilities that go far beyond its applications here, interesting as these are. Psychology strives so hard to attain objective measurement that it perhaps neglects the empathic understanding of people's views of each other, though these views constitute the experiential aspect of a relationship, and continually precipitate inter-personal action. Only by trying to see a two-person situation through the eyes of both (as well as through the eyes of an observer) are we likely to gain real insight into the ways in which people affect one another. Mrs Davis's book is a real contribution to our understanding of the processes of child-rearing and personality growth.

TERENCE MOORE

Adaptation and Adaptability. MELVIN E. ALLERHAND, RUTH E. WEBER and MARIE HAUG.

Child Welfare League of America, Inc. New York, 1966, pp. 188 + ix. \$5.

THIS book investigates the results of residential treatment in an American centre similar to our boarding schools for maladjusted children. "Bellefaire" is a residential unit for 100 emotionally disturbed boys and girls, age 6 to 16 on admission. They are divided for living purposes into cottages containing 12 to 16 children. Each cottage has 2 to 4 full-time counsellors. A school for 85 children is included with 8 full-time teachers, the remaining children going out to school. Psychological case-work (dynamically orientated) is provided for those children whom the staff consider can benefit from it. The case workers are free from direct responsibility in managerial problems. The average length of stay at "Bellefaire" is 3½ years. Fifty boys discharged between 1958 and 1961 were chosen for this special investigation. The study considers the various factors which may relate to a successful outcome, not only at the time of discharge but at follow-up. It also attempts to assess the value of individual case work on later adaptation.

Staff judgements and research team assessments are also compared. Potential for adaptability is assessed by intelligence and psychometric tests, together with assessment of the accessibility to case-

work. The potential for adaptation and the boy's actual adaptation (role performance) is measured 3 months after arrival, at the end of 15 months and again at the time of discharge. Follow-up study was assessed as a "success profile" based on 11 areas of information.

At the time of discharge the staff formulated an after-care plan for each child. The authors make suggestions about ways in which techniques for helping in a residential situation and after-care may be made more effective; they also indicate areas in which more research is needed.

This book is of interest to those working in Residential Schools or Treatment Units for children and adolescents, and could be a help in evaluating treatment methods and techniques.

W. H. WHILES

How to Prevent your Child from becoming a Neurotic Adult. ALBERT ELLIS, JANET L. WOLFE and SANDRA MOSELEY. Crown Publishers Inc., New York, 1966, pp. 247. \$4.95.

THIS book "stoutly combats the orthodox Freudian and behaviourist view that neurotic behaviour is strictly a matter of upbringing", and gives prominence to "instinctoid" differences of temperament. Childhood neurosis is represented as resulting from "irrational ideas which cause immature and insecure feelings". The author describes procedures that he advocates would be useful with children above the age of 5, based on promoting "good thinking", on "logical persuasion", and the improvement of "internalized philosophies of life". The fantasy world of the child is regarded as having little bearing upon the real world of "hard, hard work" and as such is to be ignored. Although a fairly orthodox account is given of psycho-dynamic defence mechanisms, emotions are regarded as being largely created by cognitive processes. The answer to the problem of neurosis is presented as training in straight thinking by straight talking. Such views are illustrated by numerous cases from the author's own "rational-emotive" psychotherapy, which parents are recommended to emulate. They are instructed that they must be therapists to their neurotic children, and should read "pertinent psychological books" and "take courses in self-improvement". Little importance is attached to the quality of the emotional atmosphere within the family, or apparently to the possibility that parenthood could perhaps be fun.

It would be an interesting piece of psycho-social research, possibly with significant cross-cultural aspects, to study what kind of parents read this book. With its 8-page scientific bibliography it would appear to be directed to intellectual parents who may be more in need of help to avoid over-intellectualization. It could also prevent or delay their seeking professional help. By the introduction throughout the book of professional polemics more appropriate to the psychological conference platform, the author has much reduced the likelihood that parents will find this book as reassuring and as sympathetic as some other popular writings. The existence of this volume should, however, be known to workers involved in psychotherapy with children, as the parents of some of these children may have read it.

J. B. McWHINNIE

Psychological Evaluation in Psychotherapy. LEONARD BLANK. George Allen and Unwin Ltd., London, 1966, pp. 364. 70s.

THIS book is intended as a training manual and a reference book for clinical psychologists and therapists who wish to improve their diagnostic abilities. Dr. Blank, who is both a clinical psychologist and a psychotherapist, presents 10 cases giving the detailed results of a comprehensive test battery and his interpretation of the patients' psychopathology. The tests used are the Rorschach, Draw a Person, Thematic Apperception Test, Minnesota Multiphasic Personality Inventory, Interpersonal Check List and the Wechsler Adult Intelligence Scale.

Excerpts and summaries from subsequent therapeutic sessions are also given, and this material is interspersed with the predictions and hypotheses which he had formulated from the interview and test responses. In 6 of the cases he gives an account of approximately the first 24 therapeutic sessions, and this is a sufficient but not too cumbersome sample to relate to the diagnostic assessment. It is also valuable to be able to examine the diagnosis and treatment of the patients who for various reasons had fewer therapeutic interviews.

As a training manual for teaching and discussion purposes it is useful to be able to compare and integrate the results of such a range of psychological tests, and to follow the process of building a psychodynamic explanation of the patient's behaviour. This approach is far removed from the more mechanical use of psychometrics to establish a differential diagnosis following the "cook-book" method. The hypotheses developed from this cumulative assessment can be followed in the therapeutic sessions and the presentation of the material allows for ease of cross-referencing to clarify or verify hypotheses.

A difficulty of this type of study is, as Dr. Blank states, that the psychotherapy and the test interpretations reflect the orientation of the author, but the full presentation of the test responses and account of the treatment, including the therapist's comments, enables the reader to take this essential aspect into account in his evaluation of the total process of assessment and treatment. D. BUICK

Emotionally Handicapped Children and the Elementary School. ELI. Z. RUBEN, CLYDE B. SIMPSON and MARCUS C. BITWE. Wayne State University Press, Detroit, U.S.A., 1966, pp. 284. \$12.50.

THIS book, the third in the Lafayette Clinic Monographs in Psychiatry series, will be of interest to all professional personnel concerned with the inter-relationships between psychiatry, psychology and education in general, and the education of the emotionally disturbed child in particular. The authors, a psychologist, a child psychiatrist and an educator, present an extensive research study carried on in the Wyandotte Michigan Public Schools, May 1960-July 1964, by a large and impressive team containing neurologists, psychiatrists, psychologists, research statisticians and educationists.

A total of 151 referrals to the project were made over 2½ years by the class teachers of 9 elementary schools. After an extensive screening procedure, 56 first and second grade kindergarten children were accepted and were divided into equal, matched samples—experimental and control. The experimental group were placed in one of two special classes, each containing 10 children, where they remained for a maximum period of 2½ years (average 18-20 months). The controls remained in the ordinary class room. An extensive battery of tests covering emotional, social, cognitive, perceptual, and motor functioning, were administered to each matched pair on admission and exit to and from the special class, and after a six-month follow-up period, and the results compared.

The value of the study, particularly for those interested in comparing it with special education in other countries is much enhanced by the clear, detailed presentation of the research design, the exact content of the many tests utilized both to select and to evaluate the children, and the nature and quality of the special classroom experience. The book is worth reading for these accounts alone.

Less precise and, therefore less rewarding, is the discussion of the theoretical basis of the work and the rationale for expecting positive benefit to occur from the special class experience. A very broad focus is attempted and the children are discussed and grouped using data derived from studying their emotional functioning and family background as well as performance on cognitive, perceptual and neurophysiological tests. However, no attempt is made to discuss any individual child in depth from the standpoint of a particular theoretical system.

In the same way the beneficial aspects of the special class are discussed broadly in such terms as provision of positive learning experience and the reduction of the stress of experience of failure, improved opportunity for successful peer group relationships, improved teacher-pupil ratio, continuous contact with the family, and the use of a psychiatric consultant to the special teachers, but these concepts are not further discussed in detail. Thus the book as a whole tends to give the impression that depth of understanding has to an extent been sacrificed to comprehensive coverage.

The results, as might be expected, are far from conclusive. They are clearly and honestly presented and the last section of the book under the heading "New Hypotheses" is devoted to an attempt to draw implications for further study from them.

FREDA E. MARTIN

Treating the Troubled Family. NATHAN W. ACKERMAN. Basic Books Inc., New York, London, 1966, pp. 306 + x. 40s.

THE historical origins of family therapy are unclear but Dr. Nathan Ackerman is certainly one of its patriarchs, and his clinical experience of disturbed families is probably unrivalled. This book attempts

to convey his views on clinical practice. It does so by means of chapters on technique, interspersed with verbatim transcripts of interviews; it is unfortunate that at least one of the sessions presented in detail is taken from the author's already widely-known films. Each transcript has an interpretative commentary in parallel, a format which inevitably conveys an impression of superficiality, though there are compensatory gains in vivacity. Separate sections are devoted to the focal treatment of marital pairs, adolescents and children within the family context.

Rational psychotherapy of any kind involves two closely-related yet distinct theories, dealing respectively with basic psychopathology and treatment. It would be unreasonable to expect this book on therapy to convey a comprehensive theory of pathology, especially as the author's work on family dynamics is so well known. The rationale of his therapeutic endeavour is presented in more detail. One can only observe that those who consider Dr. Ackerman's basic constructs unsatisfactory will be equally restive with his theoretical and practical comments on treatment, and it is a pity that the rhetorical style of the writing—there are whole chapters of redundancy—tends to bury some valuable observations (such as those on families with sick children) and challenging ideas (as on the radical use of counter-transference).

The main impact of this book is of the author's personality, the "flavour of the man", and here judgement is a matter of taste rather than science. Those reacting negatively will consider the author's therapeutic style to be egotistical, intrusive and flamboyant, while others will be charmed by his liveliness and spontaneity.

NORMAN KREITMAN

Adopted Children—how they grow up. A study of their adjustment as adults. A. M.

McWHINNIE. Routledge and Kegan Paul Ltd., London, 1967, pp. 302 + v. 42s.

THIS unique study of adults who were adopted as children provides a fascinating insight into the thoughts and feelings of adopted people. It should be of valuable assistance, not only to adoption workers, but to all those who may come in contact in their professional work with adopted people.

The sample of 58 people, aged 18 to 60 at the time of interview for the study, is not a random one but covers a broad spectrum of circumstances and family patterns, and is probably representative of the adult adoptive population. Many had not been legally adopted, but the definition of adoption used included those where the arrangement was considered permanent (usually the child had taken the family name) and had not been made initially for payment. Thus, the conclusions have relevance for many long-term foster placements.

The book starts with a useful background review of the development of legislation concerning the welfare of children. Twenty case histories from the subjects of the study are then given as examples. The presentation of the analysis which follows is a little confusing, but the conclusions drawn are well documented.

The difficulties experienced by the subjects of the study were influenced by a different climate of opinion about adoption and illegitimacy than is current now. This will have affected not only the community in which the adoptees lived, but more important, the attitudes of the adopting parents. Nevertheless, every situation and type of parent described can be found today. The data are, of course, retrospective—in some cases over a long period—but the aim of the enquiry was to examine the retrospective viewpoint of adult adoptees, which may be very different from that of adoptive parents.

The most important finding is the reluctance of adopted people to ask their parents for information about their origins at any age, however happy the home or well adjusted the individual, and the frequency with which they first learnt of their adoption from outside their home. Nowadays it is probably more common for parents to give some information at an early age, usually before school, but other research supports Dr. McWhinnie's finding that adopters frequently wait for questions about biological parents and are rarely advised to give such details spontaneously. It seems that adoptive parents' fears of the detrimental affect of such information are largely unfounded. Curiosity about antecedents was widely found in the sample, but the feeling that "your real parents are those who bring you up" was almost universal.

The book is rather long for the busy practitioner, but there is a wealth of interesting material which helps to illuminate this largely unknown field.

JEAN SEGLOW

The Empty Fortress. Infantile Autism and the Birth of the Self. BRUNO BETTELHEIM. The Free Press, New York and Collier-Macmillan Limited, London, 1967, pp. 484. \$9.95.

THERE is no other writer on the topic of infantile autism whose breadth and depth of experience can compare with the author of this book. His experience extends back at least 30 years to when he first took into his personal care an autistic child and in his work at the Orthogenic School, whose director and inspiration he is, he must have dealt with hundreds of psychotic children, many of them autistic. (He interchanges the terms schizophrenic and psychotic, but uses neither synonymously with autistic.) The writing of this book is thus based not only on a life-long experience with autistic children generally, but particularly over the last 12 years, on intimate work and extensive study with about 50 autistic children in a residential setting. He is, therefore, not just familiar with isolated snippets of this syndrome (however large the "sample"), but with the whole person in a human and professional way.

The book is essentially divided into three sections: introductory thoughts on early child development with special reference to autism, three detailed case histories, and a section which discusses in more general terms, etiology, treatment and the nature of autism. (The inclusion of a fourth section on wolf children, though interesting reading, tends to make the book like a compendium on autism rather than a coherent whole.)

The title itself *The Empty Fortress* is an example of the author's vivid language, which at times tends to cloud rather than clarify the issue. *Fortress* presumably refers to the rigidly defended inner life of the autistic child . . . but is it *empty*? Bettelheim himself found that behind the typical absence of relations there was hatred, and behind this "longing eternally thwarted". Laurie's story (one of the case histories) showed "what a potential for inner riches and complex structure of mind can lie buried behind the autistic child's not doing or being". If such criticisms are considered as unimportant quibbles (which they are) they should also serve as a warning not to be sidetracked as it may prevent one from fully appreciating the author's deep concern with these children, and his clinical wisdom.

He sees the autistic child's existence permeated by feelings of intense fear and utter hopelessness: "a state of mind that develops in reaction to finding oneself in an extreme situation entirely without hope". This hopelessness itself is based on the "conviction that one's own efforts have no power to influence the world, because of the early conviction that the world is insensitive to one's reactions" (the world being the early intimate environment, that is, the mothering person). Here Bettelheim approaches with some equivocation the vexed and explosive question of the parental role in the causation of autism. He is careful not to implicate mothers beyond stating his belief that mothers' handling and attitudes may be a precipitating factor, a "necessary" but not a "sufficient" cause. Particularly relevant, he feels, is the mother's response to temporary withdrawal of the infant, by itself a spontaneous and normal occurrence in early childhood: "What is then central for the child's fate is whether a spontaneous withdrawal is met with a positive, ambivalent, or negative response. While the mothering person's attitudes to the child's withdrawal are crucial, one must not, therefore, assume that they cause it." One cannot assume it, though it is a possibility; as parents, for better or worse, bear some responsibility for the development of their children, and parents of autistic children are not exempt from this. This is, of course, not tantamount to saying that they mishandle their children. There are children who are knowingly severely mishandled and maltreated, but they do not become autistic.

The Three Case Histories are the nucleus of the book. They are detailed, well written and contain a fount of information and wisdom. They provide the rich clinical background to many hypotheses and invaluable insights into Bettelheim's working philosophy with these children. To give one example: Marcia ate with great difficulty at the dinner table because she used her fingers to plug her ears and nose. It would be no good telling her that it is all right to unplug her ears and nose because if it were all right she wouldn't do it. To actually feed her was equally unlikely to help her, because if she could trust anybody that far there would be no need for her to "plug herself up" at the dinner table. "Our solution was to offer to plug her ears for her; thus she could have some fingers free to eat with. Hearing our offer Marcia promptly un-plugged her nose with her fore-finger and with her other fingers brought food to her mouth. . . . Thereafter she ate at meals, with our help in the plugging, until she no longer needed to shut out the world to that extent."

On the question of treatability Bettelheim declares firmly that the appropriate methods of psycho-analytically orientated therapy over a sufficiently long time will produce significantly

beneficial results in the great majority of autistic children, many of whom will be "returned to society". His view is based on results larger in number than any equivalent study and far more favourable in outcome than any other published data. Out of 40 children intensively treated and studied the result was poor in 8 (20 per cent), significant improvement was reported in 15 (37 per cent) and the remaining 17 children (42 per cent) can "for all practical purposes be considered cured. Most of them still have some quirks in their personality, but none that would prevent them functioning well on their own in society. Nine of the 17 are gainfully employed. Since 8 are still in High School or College this means that all who are not still completing their education are presently self-supporting."

These impressive results are the practical outcome of Bettelheim's experience and a reflection of his views. They command great respect and give enormous encouragement, and they demand that this book be studied conscientiously and with an open mind.

GEORGE STROH

The Subculture of Violence. MARVIN E. WOLFGANG and FRANCO FERRACUTI. Tavistock Publications, London, pp. 387. 63s.

THIS erudite work is the product of the collaboration of a distinguished American sociologist and an Italian physician, both of them specialists in the field of criminology. The authors are understating, not boasting, when they remark in the preface that "The bibliography presented in these chapters has been gleaned from many years of collection and reading by both authors and represents, we trust, a resource of some value to other scholars who wish to pursue the study of homicide and other assaultive crime in different detail or from another theoretical perspective". In fact they have compiled a comprehensive and invaluable survey of the scientific literature concerning the biological, psychological and social origins of human violence, and in particular of criminal homicide.

As might be expected from the wide span of their academic interests Professor Wolfgang and Dr. Ferracuti are impatient of the narrow-minded and limited conceptions which govern much of the contemporary research and thinking on this topic. They rightly deplore (p. 68) the split between the "scientific" criminologist, who tends to be a professional sociologist, and the practitioners to whom the courts turn for advice, who tend to be psychiatrists and social workers. These clinicians work with individuals on an intuitive basis, all too often remaining ignorant of and indifferent to the findings of basic research on the criminal behaviour of groups and the social context of violent crime. On the other hand they consider the sociological investigators of homicide equally to blame because (p. 257) they "have by-passed all or most of the other disciplines that could have contributed . . ."

The authors plead for something more than a broad-minded eclecticism, they want integrated theoretical concepts adequate to take account of data obtained by every relevant discipline. As an example, they put forward their own theory of a *subculture of violence* which they feel to be something of a break through in the battle for better integrated concepts. They observe that in certain neighbourhoods, or areas of the world, or strata of society, where homicide rates are high, healthy-minded individuals may resort to serious violence in certain social situations and display no real remorse afterwards. This they attribute to the offenders' affiliation to a subculture in which physical violence may be not merely tolerated but actually demanded by the public sense of values. In some social settings violence is considered the proper means of preserving family honour, protecting masculinity from threat or insult, or settling disputes, and he who fails to live up to this standard risks ostracism as a coward. In the dominant, middle-class, law-orientated section of society, however, such blood-thirsty values are considered reprehensible, except in the context of warfare.

Considerable space is devoted to considerations of definition and measurement of the hypothetical subculture of violence. It is not suggested that the subculture is totally opposed on all points to the values of the wider society, it may be merely a question of emphasis. Even in the most violently inclined subcultures men are not fighting each other all the time, otherwise life could not carry on. Willingness to resort to violence in a variety of situations may be measured by statistics of assaults, or by responses to psychological tests of aggressive attitudes and responses. In applying their theory to homicide the authors discount as statistically unimportant certain categories, such as coldly planned murder for gain, or murder associated with psychosis or with sexual crime. The bulk of murders they find are "heat of the moment" acts committed without deliberate premeditation. Such

outbursts become possible, and even common, where the subculture tolerates or supports violence as a legitimate reaction.

Since this book is mostly about the American scene it is perhaps unfair to suggest that the subculture concept has less relevance in a country like England where the murder rate is low and where pathological offenders predominate among murderers. There is some danger that less sophisticated readers may over-simplify what is in essence a sociological concept, to the exclusion of essential individual factors. For example, Professor Wolfgang himself demonstrated (p. 190) the high incidence of heavy drinking among both victims and murderers at the time of the crime. On a too literal interpretation of the theory it could be argued that this finding is paradoxical. Alcohol is a disinhibitor which tends to release individuals from the straight-jacket of social requirements. If men are being driven to homicide by social expectations one might expect a few drinks to calm them down. In practice, the homicidal outburst is the final outcome of a complex interaction between social, psychological and physiological factors. The subculture theory is one way of looking at the problem, but it is hardly the last word in integrative concepts.

D. J. WEST

Adoption—Facts and Fallacies. Studies in Child Development. M. L. KELLMER PRINGLE

Longmans, Green and Co. Ltd., London, 1967, pp. 251. 21s.

THIS systematic review by workers at the National Bureau for Co-operation in Child Care covers research work in child adoption in the United States, Canada and Great Britain between 1948 and 1965. It is the first in a series of three, the other studies being on Foster-Home Care and Residential Child Care.

Abstracts are given of 61 completed research projects, with details of the aims of each study, the size of the sample, methodology, tests and other measurements used. There is an annotated bibliography of publications relating to adoption, and on-going research projects are listed with a further list of references to material of marginal relevance to this comprehensive review, and finally a composite bibliography. The staff of the National Bureau have thus brought together a mass of material previously scattered in libraries and different publications, and by systematic analysis they have provided a most valuable reference book. Dr. Pringle has contributed three chapters on the aims and methods of the review, the overall evaluation of the research findings, and an appraisal of the "facts and fallacies". The facts are few and show that the main emphasis in adoption research has been to consider success and failure as seen by the adoptive parents. The main fallacy has been that adoptive parenthood is little different from having children of one's own, and in her conclusions Dr. Pringle discusses the need for more long-term casework help to adoptive families.

In her evaluation it is understandable that as a psychologist Dr. Pringle has attributed more authority to psycho-metric studies compared with studies involving casework interviewing techniques. Psychological testing media, however, are limited to the questions they ask, whereas a less structured casework approach can allow all parties in adoption unconfined opportunity to teach us the facts. Such facts can be unique to adoption and may be excluded by all-too-fashionable rigid adherence to "control group" methods. Dr. Pringle's comments about comparative studies are thus particularly noteworthy, for example, "... whether or not a larger proportion of adopted than biological children are at risk psychologically is a sterile if not misleading question. To know about the kind of risk would seem to be much more important than to elucidate its incidence." Her analytical appraisal is clear and concise, clarifying the areas where further research is needed.

There is certainly need that such a valuable reference book be kept up to date. It is to be hoped that the Home Office, which can be congratulated on its vision and imagination in financing this initial review, may consider supporting revision at appropriate intervals.

ALEXINA M. McWHINNIE

Mild Mental Retardation: A Growing Challenge to the Physician. Report No. 66: Group for

the Advancement of Psychiatry, New York, 1967, pp. 52 + iv. \$1.00.

THE role of the mildly retarded person in achievement-orientated societies is never likely to be a happy one. The more successful such a person is at camouflaging his intellectual disadvantage, the

more frequently he finds himself in situations beyond his powers, with little hope of sympathetic help. This report is primarily aimed at the American private physician who, it appears, may have at present little awareness of the needs of this section of the population. The report usefully divides these people into two groups, A and B. Group A, comprising the larger number, is of low socio-economic status, and the parents seldom seek medical or educational help. Group B children usually stand out early in their higher socio-economic families as being different, and active efforts are made by the parents to elicit aid.

The report introduces the distinguishing characteristics of the two groups, and points out the psychopathological and aetiological differences. It lays down guide lines for the physician attempting to help parents and the mildly retarded child, and encourages him to take an active part as a community leader in changing the attitudes of a society which contributes to the problem by denying adequate schooling, housing and health services to the under-privileged.

This inexpensive introduction to the subject deserves to be read widely by family physicians in Britain as well as America, and should greatly help in the re-orientation of medical effort towards this rewarding field.

J. T. R. BAVIN

A Symposium: Mental Retardation. G. A. JERVIS. Charles C. Thomas, Springfield, 1967, pp. 248. \$9.75.

For many years the subject of mental retardation was neglected and unpopular. To some extent this situation has been remedied of recent years. An important stimulus to work in this field has been provided by the association of the Kennedy family with efforts to provide adequate funds, facilities and to attract workers to the subject. The Joseph P. Kennedy Jr. Foundation was established in 1946 by Ambassador and Mrs. Joseph P. Kennedy for this purpose and the late President John F. Kennedy was for some time the president of the Foundation. Among other things, the Foundation established in 1962 an annual programme of awards for outstanding work in connection with mental retardation. When the awards are distributed a scientific symposium is held. The present volume contains contributions to the first and second symposia.

It is very valuable to have these papers collected in one volume though it is unfortunate that there should have been a 4 or 5 years' delay in their publication. This is particularly true of contributions dealing with such rapidly developing subjects as cytogenetics and metabolic disorder. It is in fact only 8 years since the first visible gross chromosome error in man was discovered so that the four studies on this subject in the present volume cover only the first half of the "chromosome era". A paper by Professor Penrose deals with mosaicism in Down's anomaly and one by Barr and his colleagues with the genetics of the same syndrome. A third paper presented by David Carr, a colleague of Barr's in Western Ontario, deals with chromosome anomalies in spontaneous abortion. The evidence in this study favours the general thesis of a "continuum of reproductive casualty" even though contributions to this consist of many distinct pathological processes. Thus, the X/O chromosome arrangement was found in 3 per cent of aborted specimens in contrast to an estimated incidence of 1/5,000 births, suggesting that the condition might be lethal in 15 out of 5,000 pregnancies.

There are four biochemical contributions on homocystinuria, maple syrup urine disease, metabolic leucodystrophy and phenylketonuria. The excess of sulphatides in the urine in metabolic leucodystrophy permits of more accurate definition of this disorder and gives some insight into its chemical pathology. It seems likely that, as knowledge develops of these rare disorders which interfere with cerebation, they will be reported more frequently. Recent developments in chromosome studies and biochemistry have brought to light many "new" conditions in the field; there is still, however, a place for the isolation of genetic entities by the methods of classical genetics and a paper from California describes a family with five members affected by partial agenesis of the corpus callosum, apparently transmitted in a sex-linked manner.

It is not surprising, in view of the considerable recent advances in the biological field in the understanding of mental defect, that this aspect should figure so largely in the present volume. There are, however, several chapters devoted to behaviour, and a report by Leonard Ross from Wisconsin makes a plea for more use of standard techniques such as eyelid conditioning in the investigation of the mentally retarded.

B. H. KIRMAN

Family Advice Services. Studies in Child Development. A. LEISSNER. Longmans, Green & Co., London, 1967, pp. 86. 12s. 6d.

"LET there be Family Advice Services" said the authors of the Children and Young Persons Act (1963), echoing and giving authority to the recommendation of the Ingleby Committee (1960). However, as our author notes: "Advice services of various kinds and under a variety of names had already been set up by a number of Children's Departments before the 1963 Act". In 1966, the National Bureau for Co-operation in Child Care began the survey of which this book reports the first phase. Provision had already reached the state of rich variety which creates an impression of impenetrable chaos on most foreign observers of British institutions. "Different types of F.A.S. settings were often found in operation within the same County or Borough Children's Department."

Arych Leissner, the author, has done a most workmanlike job of revealing to us what we are up to. He has distinguished four types of F.A.S. setting: a unit within a Children's Department, or one serving several statutory agencies; one lodged in a voluntary agency, but financed and partly supervised by a Children's Department; or a detached "outpost" serving an area of special need in premises usually provided by some other statutory service or shared with several. The goals sound simple: to prevent family breakdown and to prevent children from coming into care and/or appearing before Juvenile Court. But owing to the ambiguity of language, "In practice, the concept of prevention is as loosely and widely, or as narrowly, applied as the individual worker deems fit". The functions are various and debatable. Some services aim to help clients as yet unserved by any of the manifold existing agencies (of whom there seem to be surprisingly many). Others accept referral from other agencies, and in turn refer to them. Some specialize in short-term advisory or "counselling" work, thus duplicating with a professional service the voluntary service of the C.A.B.s; others provide intensive casework (resembling that of the Family Service Units) if required, alongside the briefer work. Some have their own full-time staff, others are staffed by Child Care Officers on a rota. Some of these C.C.O.s work differently in the F.A.S. setting and in their regular work, and some do not. The F.A.S. sometimes plays a valuable role in co-ordinating the work of other agencies, sometimes it acts as a detector of community problems and an initiator of community action. You pay your money and you take your choice; but the present development is on the whole considered encouraging. The illustrative case reports are most helpful.

E. E. IRVINE

Social Work and Social Values, Edited by EILEEN YOUNGHUSBAND. George Allen and Unwin, London 1967, pp. 200. 35s.

LIKE former volumes of *Reading in Social Work* this is a collection of outstanding articles from British and American Social Work journals.

It opens with several papers on the nature and place of values in social work. Hollis, in a previously unpublished paper, redefines the ambiguous and misleading concepts of "non-judgmentalism" and "client self-determination", and claims that social work can have a commitment to scientific method without subscribing to positivism, thus leaving room for intuition as well; (but is it scientific *method* which social workers use, or scientific *knowledge*?) She argues very cogently the case for encouraging maximal self-direction in the client, within reason, whereas Emmet proposes a somewhat didactic role for the social worker, suggesting that many clients lack moral standards for the latter to release. Kaplan on *Ego Deficiency in Delinquents* and Pollak on *The Treatment of Character Disorders* are concerned with just this kind of client, explaining why casework methods influenced by psychoanalytic technique (devised for neurotics in need of liberation from excessive guilt) are inappropriate for those who are skort on guilt and inhibition. However, the method proposed is one less cerebral than Emmet's, that known as the "corrective experience", in which "a strong element of nurture and personality rearing limits", but only in the context of a deep and satisfying relationship.

Coyle presents the task of the social services as the repair of social damage appearing as a by-product of competitive, rapidly changing technological societies. She acknowledges (in 1956) an inadequacy in the sociological equipment of social workers. Kluckhohn (1958) attempts to fill one

of the gaps with a now classic paper on variations in the value systems of various cultures as they affect the family. In this short space we can only mention Stevenson's use of a co-ordinating committee discussing a "problem family" to illuminate the variety of goals and value systems which divide social workers and administrators, and often one social worker from another (according to his service); and finally, a superb paper by Lambrick on *Communication with the Patient* (in the setting of a general hospital).

This book will be of primary value to social work students and their teachers, but also to those in allied professions who wish to know what the aims and methods of professional social workers really are. The articles selected have a high level of clarity and readability, and can be recommended as an antidote to Lady Wootton's choice collection of the mystical and the turgid.

E. E. IRVINE

The Hawkspur Experiment. W. DAVID WILLS. George Allen and Unwin Ltd., London, 1967, pp. 193+xiv. 24s.

THIS is an account of the Hawkspur Experiment known to many as Q Camps. David Wills, a Quaker, trained in psychiatric social work in New York, tried working in a Borstal but soon moved away to set up his own curative environment for social misfits. Some 50 boys between the ages of 16 and 23 were admitted from 1936 to 1940.

The principles on which the camp was run were derived from the work of Homer Lane, but Wills was also influenced by Denis Carroll and the Institute for the Study and Treatment of Delinquency. The regime was always felt to be better suited to beginners in delinquency, although something similar for hardened offenders was hoped for but in a special environment away from society. It was always recognized that some boys would need psychotherapy. The author calls this book a confession of faith rather than an official history, he describes the administration of the camp, the work of the camp council, and shows how sex and punishment were dealt with. The curative factors are seen as personal relationships and, in particular, transference situations.

This edition includes follow-up notes on some of the boys. Unfortunately details are only given of 17 boys, of whom 6 may be said to be doing well, and the others have been lost sight of. The author, with his faith in the individual boy, tends unfortunately to regard no news as good news.

David Wills was, and is, a pioneer. Many of the things put into practice 30 years ago are being "rediscovered" and this book indicates some of the problems that arise when one tries to form personal relationships with anti-authoritarian lads. We still struggle with the non-conformist and differ as to how much anti-social behaviour the community should tolerate. We emphasize either the needs of the person or the needs of the society. The trend at present is to see the naughty and the ill as two equivalent forms of maladjustment but we are still not clear how far they can be dealt with in the same establishment.

ROBERT F. BARBOUR

The Nature of Human Intelligence. J. P. GUILFORD. McGraw-Hill, New York. 1967, pp. 538 + xii. 118s. 6d.

WHETHER one agrees or disagrees with Guilford's psychological views, one must admit that he writes a good book. This one fully lives up to the tradition of *Psychometric Methods* and *Personality*. There is an enormous amount of clearly and critically summarized information in its (roughly) 400,000 words; and so far as the reviewer could see, the proof-reading and the 900 or so references are 100 per cent accurate. The rather small print and the long lines are, however, rather trying on the eyes.

As one would expect it is centred around his controversial factorial theory of the Structure of the Intellect. Guilford started out where Thurstone left off in differentiating different kinds of abilities, and stressing the multi-dimensionality as against the unitariness of intelligence. He marshals the arguments ably for this view, and the arguments against hierarchical or "g" + group factor models, in the first three chapters, which cover the development of theories of intelligence. Particularly he stresses the point that different mental faculties develop in childhood and decline in adulthood at

different rates, and seem to be differently affected by environmental conditions, education and pathology. Thus he arrives at his well-known 3-dimensional or "morphological" model, whereby mental abilities can be cross-classified according to:

5 kinds of OPERATIONS: namely Cognition, Memory, Divergent Production, Convergent Production and Evaluation,

6 kinds of PRODUCTS: Units, Classes, Relations, Systems, Transformations and Implications

4 kinds of CONTENTS: Figural, Symbolic, Semantic and Behavioral.

$5 \times 6 \times 4$ yields 120 possible factors (or groups of factors), and Guilford claims to have measured some 80 of these "unique" abilities. The next 5 chapters provide details of the work done on each factor, with illustrative test items, most of which has hitherto been available only in the University of Southern California Reports. The ingenuity of the dozens of high-level tests which he and his collaborators have produced is astonishing; but so, too, is the ineptness of many of them as representative of every-day human intellectual functioning. Elsewhere the reviewer has compared the factors to permutations and combinations of different kinds of crossword puzzle clues, rather than to the mental processes people actually use in perceiving, reasoning and coping with their education, work, other people, etc. This is most strikingly apparent in the relatively new category of Behavioral Contents, which seems to derive from Thorndike's notion of a "social intelligence", complementary to "abstract" and "concrete intelligences". The tests for behavioral factors all consist of multiple-choice problems with pictures or cartoons, requiring identification of the emotions, intentions, etc., portrayed. There is not a tittle of evidence that such tests tell us anything about a person's responses to social situations in daily life, let alone to other types of "Behavior".

However, Guilford is by no means a psychometrist only. The bulk of the book (11 more chapters) is devoted to linking up his factors with general psychological theory, particularly with information theory and Piaget's developmental theories of intelligence, and to interpreting all that is known regarding intellectual growth and decline, the effects of learning and education, and of physical and environmental conditions on the various aspects of intelligence. He would claim, in other words, that the evidence for the validity and usefulness of his factors lies in their "construct validity". Much of this, clearly, is speculative and not very convincing. But he certainly succeeds in bringing together quantities of research from every quarter that bears on the whole realm of intelligence, and demonstrating that there is more to it than just "g".

P. E. VERNON

The Therapeutic Effect of Environment on Emotionally Disturbed and Mentally Subnormal Children. KENNETH BAYES, Black, Bayes, Gibson & Partners, London, pp. 58.

THOSE who are interested in perception/personality relationships and are also familiar with habitats set aside for atypical children, realize the important part space, colour and other environmental variables play in their lives. Architects, behavioural scientists and clinicians sometimes employ complex tools, and are often brought face to face with intrinsically similar problems; but how real is their collaboration, and where does casual guesswork end and research begin? In what ways should architectural functionalism take cognizance of a child's experience of space, which is more than visual, and how can we make allowance for perceptual limitations and peculiarities that stem from a variety of factors—both known and unknown?

These are a few of the questions posed by the author of this small highly condensed monograph, which is one of the Kaufmann International Design Award Studies. What Mr. Bayes has done is to assemble and collate information from various sources about physical environment, thereby helping the reader find his way through the maze of design principles, some of which could be most relevant to the construction of a new milieu for emotionally disturbed and subnormal children. It will be intriguing to see whether new projects, such as psychiatric units, special boarding schools, or even children's hospitals, are likely to profit from a book of this kind, which is technically valid and long overdue.

CHRISTOPHER HAFNER

Theories of Child Development. ALFRED L. BALDWIN. Wiley, London, 1967, pp. ix + 618.

ONE OF the author's basic assumptions is that no current theory of child development approaches the degree of rigour and clarity that an adequate theory must achieve. He thus tries to assess the possible usefulness of each theory discussed in respect of future development, rather than dwelling on its present methodological weaknesses. Six theoretical portions are discussed and in each case there is a review of some of the major research on which each is based.

Chapter 1 gives a systematic description of common sense beliefs about human nature, i.e., *naïve psychology*, and is greatly indebted to the work of Heider. Such beliefs are evaluated in the second chapter in the light of scientific theory. Baldwin's opinion is that psychologists have responded to problems of naïve psychology in three ways: namely, by constructing theories (a) on the basis of a completely external view of human behaviour; (b) by the refining of naïve psychology without throwing away the wisdom they believe to be in it; and (c) by the discarding of the canons of natural science as inappropriate for an understanding of human behaviour. The six theories of development then discussed represent the first two strategies.

The author begins with Kurt Lewin's child psychology together with an evaluation of field theory and concludes that the latter is more valuable as a research strategy than as a theory *per se*. The work of Piaget then follows, taking up over one-fifth of the whole book in five chapters. His fundamental concepts, stages of thinking, and views on the nature of the process which leads from one stage to the next are all covered. Chapters 10 to 13 inclusive deal with Freud's concepts, his theory of psychodynamics and his views on personality development. Many readers will be glad to have Baldwin's succinct though fair-minded critique of psychoanalytic theory. In the section which deals with S-R theories the author deals first with their research strategy and basic principles, and then presents some of the elements of social-learning theory; viz. the role of dependency in infancy and dependence anxiety, with dependency being seen by some as the root cause of much socialization. At the same time Baldwin points out that many studies now within social-learning theory are orientated towards simpler concepts of conditioning rather than psychoanalytic ones, and he discusses some of these.

In chapter 17 Werner's theory of child development is given. It is described by Baldwin as a coherent organismic and developmental theory but one which in comparison with the earlier theories discussed shows little concern for children's everyday behaviour. The final theory discussed is that of Parsons and Bales. Although drawing on Freudian theory the author points out that this is really a psychological-sociological theory of child development, for it is chiefly concerned with the changing role of the child in the family and with the dynamics of family interaction which brings about the socialization of the child.

The final chapter compares the six theories in two ways. First, the author gives what he considers each theorist would say about the other five theories. Second, he is convinced that although the theories do not overlap there are some general hypotheses of child behaviour and development which find some support in the various theories. Ten such hypotheses are proposed which present some specifications for an integrated theory.

This book covers a great deal of ground and is written by an author with much experience in the field of child development. At the same time there are some omissions. For example, although there is some discussion of the role of language in Piaget's system around page 237, the author does not really get to the heart of Piaget's views on the nature of the relation between language and operative thought. On page 255 a + sign should replace the = sign at the end of the second paragraph. Nevertheless, the work is recommended. Developmental psychology is a very active discipline today and students are in danger of losing sight of the broader perspective of theory. This book will do something to correct this.

K. LOVELL

Adolescent Development. ELIZABETH B. HURLOCK. Third Edition. McGraw-Hill, New York, 1967, pp. 719. \$8.95.

THIS is an impressive collection of opinions, attitudes and research findings from the United States of America. It carries echoes of a society which is vibrant, energetic, affluent and excitable, and it is in this setting that Professor Hurlock presents her protest against ancient myths as to the inevitability,

universality and transitoriness of storm and stress among adolescents—their moodiness, their rebelliousness, their lack of responsibility and the general distinctiveness of their behaviour.

The author recognizes the wide range of individual differences at every age, and the relationship of behaviour to experience. She notes variations from one cultural background to another. She is convinced of the seriousness of the habits learnt in youth, and she challenges any belittling of troublesome behaviour as a "passing phase" which will be "outgrown" or "kid stuff" characteristic of all at certain stages.

With this she combines an awareness of recent research into the significance of the self-concept as this is developed by each human being. She has therefore much to suggest on levels of aspiration, the effect of failure, and difficulties associated with social mobility, changes in sex roles and preoccupation with status symbols. She recognizes the importance of adult guidance towards wholesome attitudes; and while she does not explicitly emphasize the psychological needs of appreciation, participation, and insight, she is well aware of the part played by social acceptance and self-acceptance.

Her definition of adolescence links it closely with pubertal development. For her the period extends broadly from sexual maturity until the age of 21 when independence is legally assured. Admitting that the age of sexual maturing varies widely, she avoids the common error of postulating a difference of 2 years between girls and boys. Her interpretation is roughly ages 13 to 17 for early adolescence in girls, ages 14 to 17 in boys; and ages 17 to 21 for late adolescence in both boys and girls.

The book is a fascinating mixture of recognition of the social determinants of behaviour and a serious-minded concentration on the contemporary customs, attitudes and ambitions of young people in the United States. With apparently deliberate intent European references are almost non-existent. There is much discussion of success, recreation, religious beliefs, dissatisfactions, friendships, leaders, socio-economic levels, misdemeanours, dating and going steady. Throughout there is an emphasis on the requirements of social maturity as, for instance, in her concern with the after-effects of undue petting and pre-marital sexual intercourse as predictive of unhappy rather than of happy marriages.

Many of the topics which are of concern to British parents or teachers are, understandably, omitted. Perhaps symbolic is her concluding discussion of self-acceptance and happiness. Of the latter the basis is held to be acceptance by others, affection and achievement in some field. There is no hint of the agonized discussion of abilities, educability and opportunity, which characterizes a more selective system of secondary and tertiary schooling.

C. M. FLEMING



NOTICE

The INTERNATIONAL ASSOCIATION FOR CHILD PSYCHIATRY AND ALLIED PROFESSIONS will organize the 7th International Congress which is to be held in 1970 in Jerusalem and will be devoted to the study of the Child in his Family.

During the four main days of the Congress, symposia will be arranged every morning on the following topics:

First day : consequences of physical illness of the child or parent on the mental health of the children of the family.

Second day: mental illness in the family and its impact on the children.

Third day : the family as a unit.

Fourth day: the family and its environment.

During the afternoons, the participants will have the opportunity to meet in discussion groups where they will study systematically the topics of the symposia.

For all preliminary information, write to the President^o of the Association, Dr. S. Lebovici, 3 avenue du President Wilson, Paris 16e, France.